

# Visage 7 Web Client

## Online Guide



Information about manufacturer and distribution contacts as well as regulatory status of the product can be found in the User Manual.

Some of the specifications described herein may not be currently available in all countries. Please contact your local sales representative for the most current information.

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# System Overview

Visage 7 is a software product for the distribution of image and report data via intranet or Internet.

Visage 7 is ideal both for complex requirements of large hospitals and for specialists' practices. The system can be customized to provide the optimum solution for each customer.

In this section you will find an overview of the Visage 7 system and the Visage 7 Web Client and its data security concept, and an introduction to the Visage 7 user documentation available for this software.

## Intended use

Visage 7 is a system for distributing, viewing, processing, and archiving medical images within and outside health care environments.

The Visage 7 server receives image data in DICOM format via the hospital network. This provides universal connections to archives, modalities, and workstations.

The supported modalities are listed in the DICOM Conformance Statement.

Visage 7 is to be used only by trained and instructed healthcare professionals. It can support physicians and/or their medical staff in providing their own diagnosis for medical cases. The final decision regarding diagnoses, however, resides with the doctors and/or their medical staff in their own area of responsibility.

Although the web and thin client technologies allow the software to be run on a variety of hardware platforms, for diagnostic purposes the user must make sure that the display hardware used for reading the images complies with state-of-the-art diagnostic requirements and currently valid laws.

Only DICOM for presentation images can be used on an FDA approved monitor for mammography for primary image diagnosis.

Only uncompressed or non-lossy compressed images must be used for primary image diagnosis in mammography.

## Constancy check

Visage 7 is a category A diagnostic imaging device (DID) for which the equipment used and the ambient conditions at the installation site must meet special requirements (RöV German X-Ray Ordinance dated January 8, 1987 in the version dated June 18, 2002 amending the RöV and other atomic energy ordinances). Imaging devices of this category are labeled accordingly.

The user is required to perform a monthly constancy check on these imaging devices in compliance with RöV, §16, per DIN 6868-57 (DIN V 6868-57:2000, Image quality assurance in diagnostic X-ray departments, Acceptance testing for image display devices).

The characteristic and reference values for the constancy check shall be defined during the acceptance test. The reference values shall be ascertained using the user's test instruments (luminance meter, at least class B (DIN 5032-7) with valid calibration, range 0.05 cd/m<sup>2</sup> to 10,000 cd/m<sup>2</sup>).

## Product overview

Visage 7 is a client/server application. It comprises the following components:

- Central Visage 7 server(s) in the hospital and
- Visage 7 Web Client clients in the wards, in special departments or in the physicians' practices.
- Visage 7 Clients (optional)

In this section you will find information on:

- *System architecture*
- *License management*
- *System requirements*
- *Hints for Visage 7 Web Client installation*
- *Archiving with the archive option*

## System architecture

In a hospital, all radiological patient data is collected on a central web server, for example, for the duration of the patient's stay. Each modality used to examine the patient sends the study data not only to a long-term archive but also to the web server.

If physicians require information on patients and their examinations they can call up an Visage 7 client from anywhere within the hospital intranet and will find the re-

quired study information there. In order to make sure the patient information on the web server is complete and up to date physicians can query other nodes in the network for recent examination data.

Whereas a HIS/RIS only makes administrative data generally available throughout the hospital, the Visage 7 solution takes the idea of central data collection and universal availability of data one step further. Visage 7 Web Client makes radiological study data, which includes DICOM image data and reports, available at the clinical workplace.

In this context, the central web server functions as temporary storage medium of image data (usually for the duration of a patient's stay at the hospital, e.g. 2-4 weeks) and as an image distribution center.

Moreover, Visage 7 also extends beyond the hospital and its internal data network. With appropriate authorization the web server can be accessed from the outside as well, making use of the Internet. This way referring physicians can quickly and easily call up information on the examination results of their patients. Accessibility via the Internet also proves helpful in critical situations where the opinion of an additional external expert is required.

The use of a secure data transmission protocol and additional data encryption options ensure high data security for this kind of data distribution via the Internet.

## Web server

Visage 7 servers are web servers with a database to which the relevant image material is transmitted after examination or reporting. An internationally standardized transmission protocol as defined in the DICOM standard is used for this purpose.

### Note

Visage 7 will not be able to guarantee the availability of data if studies/series that have been transferred by other network partners contain errors.

As a rule, the image data remains on the Visage 7 server only for as long as a patient is undergoing treatment or is an actual in-patient. How long data will be stored on the Visage 7 server depends on the storage capacity of the RAID system and on the license.

Please be sure to dimension your RAID in accordance with the data volumes in your institution.

Data storage in Visage 7 is based on the FIFO (first in, first out) principle. Changes to patient data result in the data being given a new time stamp. Once the storage capacity of the system has been reached, the oldest data is automatically deleted in order to create space for new image material. The data can be reloaded from the hospital's archive at any time if needed.

## Web clients

Visage 7 Web Client allows you to log on to the Visage 7 server and to access the data that is stored on the server using the HTTP/HTTPS protocol.

Data can be accessed in two different ways:

- From the various wards or departments of a hospital via the intranet or

- From outside the hospital, that is, from physicians' practices via the Internet (fast transmission rates are recommended)

Visage 7 Web Client use the Microsoft Internet Explorer as a web browser.

To implement the functions required for editing images, special software components are used that are based on ActiveX. By using standard Internet technology it is therefore possible to use standard PCs as viewing stations.

### **3D Thin Client option**

With the additional Visage 7 Client product option the system also supports distribution of 3D image data generated from state-of-the art scanning modalities.

A 3D render server (application server) processes the 3D data and makes it available over an intranet or Internet connection for 3D image viewing and evaluation. The actual DICOM data remains on the 3D application server and is not transferred to the 3D clients. Instead of image data a stream of compressed screen content is transmitted during interaction, which allows for safe and consistent access even to large volumes of 3D data.

## **License management**

Every Visage 7 installation comes with a license code. Without it the software will not run.

### **Licenses**

The license code serves as copy protection and controls which product options are enabled. This includes:

- The maximum number of DICOM connections for calling/importing data from the network onto the Visage 7 system, and for sending data from the Visage 7 system.
- How many users may access data on the server simultaneously (per client type).
- The maximum data volume on the system
- Activation/deactivation of the audit trails.
- The availability of an archive option.
- The availability of the HL7 (Health Level Seven) option.
- The availability of the GSM (Global Session Manager) option.
- The availability of the worklist server option.
- The availability of the failover option.
- The accessibility of the Visage 7 Client.

Visage 7 uses the so-called "floating licenses" concept. This means that a license is not bound to a particular user name or a dedicated workstation or PC. A license for 10 users means that 10 users can work with a Visage 7 Web Client or Visage 7 Client at any one time. If an 11th user tries to log on, he or she is told to try again later. Once one of the original 10 users logs off, logon of the 11th user will be permitted. Of course, licenses can be upgraded.



**Upgrade**

When upgrading an installation the old license becomes invalid. The new Visage 7 license, which comes with the upgrade, must be installed.

If a larger data volume was licensed in a previous version, this may lead to the oldest data being deleted from the system after the new license has been installed, depending on the “auto-delete” settings defined by the system administrator.

**Client types**

Visage 7 Web Client provides different client types with different levels of functionality:

- **Visage 7 Web Client View** with essential image viewing functions.
- **Visage 7 Web Client Classic** offering more image handling and review functions.
- **Visage 7 Web Client Expert** with full functionality.
- **Visage 7 Web Client Expert Dual Monitor** with **Expert** functionality plus support of two monitors.
- **Visage 7 Web Client Expert Reading** with all the features required to use Visage 7 Web Client for primary reading. The client type **Expert Reading** is available with the **Expert** licence.

For a detailed comparison of the client types refer to the *Appendix*.

If your installation does not support one of these license types an error message will be displayed when you try to log in.

**System requirements**

When describing system requirements we make a distinction between server and clients.

**Server**

For a specification of the hardware and software requirements for Visage 7 servers please contact your sales representative.

**Clients**

These are the minimum hardware and software requirements for Visage 7 Web Client PCs:

- **Operating system and software**
  - Microsoft Windows 7, or
  - Microsoft Windows XP, or
  - Microsoft Windows Vista
  - Microsoft Internet Explorer 6, 7, or 8
  - Microsoft NetMeeting (optional equipment for teleconferencing)

- **Computer/processor**  
Intel Pentium III with at least 500 MHz (Intel Pentium IV, 2 GHz recommended)
- **RAM**  
256 MB (more memory may be required depending on the size of your images.)
- **Hard disk**  
At least 2 GB free hard disk space
- **Graphics card**  
Resolution of at least 1024x768 pixels, true color
- **Monitor**  
17" color monitor (21" recommended) or grayscale monitor

**Note**

Mammographic images may only be interpreted using an FDA-approved monitor that provides at least 5-Mpixel resolution and meets other technical specifications reviewed and accepted by the FDA (U.S. only).

**Tip**

If you are working with high-resolution monitors your system administrator can configure the display of Visage 7 Web Client so that larger font sizes and icons are shown.

- **Other**  
Network link or ISDN/analog modem  
Loudspeakers, microphone, and web cam (optional for use with Microsoft Net-Meeting Software)

## Hints for Visage 7 Web Client installation

During installation the Visage 7 server is listed as a *Trusted Site*. To ensure that the Visage 7 Web Client ActiveX components can be installed on the client computer you must set the security level for *Trusted Sites* in the relevant network zone (intranet or Internet) to **Medium** or **Low**. The security level **High** would prevent ActiveX components from running.

In order to change the security level for *Trusted Sites*:

1. Open the **Internet Options** (menu **Tools > Internet Options**) dialog box in the Internet Explorer.
2. Click the **Security** tab card.

3. Click **Trusted Sites** and **Custom Level**.
4. Check the settings for *Trusted Sites* and change them if necessary.
5. Also be sure to disable **Use PopUp Blocker**, if you are working with Windows XP, Service Pack 2 or higher.

In order to add a *Trusted Site* manually:

1. Enter the Visage 7 Web Client URL (e.g. `http://servername/en`) in the Internet Explorer address bar.
2. Select and copy the URL (**Ctrl + C**).
3. Open the **Internet Options** (menu **Tools > Internet Options**) dialog box in the Internet Explorer.
4. Click **Trusted Sites** and **Sites**.
5. Paste the URL in the **Add this Web site to the zone** box (**Ctrl + V**).
6. Click **Add** and then close the dialog box with **OK**.

#### Note

For installation, administrator privileges are required on the client computer.

#### Tip

At some sites Visage 7 Web Client is distributed in the Windows Domain with a so-called MSI Package. If this is the case Visage 7 Web Client will be installed automatically, no user interaction is required here.

## Archiving with the archive option

With the archive option, data is sent to the archive according to a configurable schedule.

These archive options are available:

- Archiving on RAID hard disks
- Archiving on SAN and NAS devices

Which archiving method is used will depend on your requirements, the hardware used, and the configuration of archive option.

#### Tip

Archiving is always performed in the background. As a user you will not actively intervene in archiving. However, you can monitor the status of archiving in the study list and exclude studies from archiving.

## Data protection and data security

Data relating to individuals is subject to data protection. In this regard, please ensure compliance with all applicable laws and regulations in your country.

Visage 7 provides extensive security mechanisms that help you assure data protection and data security:

On the administration platform the system administrator can also activate the audit trail option. This ensures that the system follows the strict regulations concerning patient data protection and data security according to US law.

### Note

For security reasons, it is not permitted to make changes to the product Visage 7 and its database. Contravention of this will lead to all guarantees being revoked and under some circumstances may even be violating applicable laws.

## Access control and authentication

Visage 7 employs a user management concept that controls both access to study data and the availability of program functions.

Each user must log in on to a Visage 7 client with a **user name** and **password**. The Visage 7 server checks these entries. Only if they match is access to the system granted.

### Access to data

Access rights to study data are defined by the system administrator on the Visage 7 server. The basic idea is that only those users who are involved in a particular case should have access to study data.

Access authorization ensures that users can only view data for which they have access rights.

### Access to program functions

In addition to restricting access to data, the system administrator can also make certain program functions available to some users but not to others. This way, every user will find only those icons and functions on the user interface that he or she really needs. Controlling the range of functions available for each user also adds to data security. The availability of potentially critical functions such as making specific patient data available to other users or deleting data that is no longer needed can be restricted to more experienced users.

When a function is disabled on a user level, the icon or input field for that function is also disabled.

Visage 7 comes with a number of preset user levels with predefined functionalities. The Visage 7 system administrator can adapt these user levels to your requirements.

- Login and password** To ensure that user accounts and their passwords are effectively protected from unauthorized access:
- passwords are encrypted
- and, if this has been configured
- passwords will expire
  - failed login attempts are recorded, and multiple failed login attempts will cause a user account to be locked.

**Note**

Recording logins and other actions only makes sense if all users on the system have their own user names and passwords.

**Tip**

You should change your password from time to time for data security reasons.

- User profiles** The working environment of each user (user profile) is saved on the server when you log out. This supports roaming, which means that you can log in from any computer and find exactly the working environment you are accustomed to.
- Auto logoff** Visage 7 can be configured so that a logged in user is logged off from the system after a configurable period of time with no user interactions. This prevents licenses from being unnecessarily blocked and stops any unauthorized persons accessing data if a user has logged on but has forgotten to log off again.
- Multi-session operation** If configured, a user may log on to Visage 7 more than once from different PCs. Multi-session operation allows users to work from more than one clinical workplace simultaneously and view the same data there.
- Each session makes use of (and thereby blocks) one license.
- Service access permissions** Remote access for service purposes must be granted explicitly. It is therefore up to you if and to what extent you wish to grant access rights to service.
- Full Access

Service has read and write permissions. This means that service personnel can analyze problems and can solve these problems or change settings. Service access is logged.
  - Limited Access

Service has read permission only.
  - No Access

Service has no access.

**Note**

Please note that with full access, service is granted unlimited access. Under certain circumstances this may include patient data which has not been anonymized.

## Audit trails

Logging of user actions in Visage 7 occurs in so-called audit trails. Audit trails are recordings of access-controlled actions. They are the proof that access to patient data is monitored.

A message informs users that their actions may be monitored.

The following activities are recorded if the audit trail option has been activated by the system administrator:

- Changes to access rights with accessing user, date and time
- Viewing, printing, or deleting patient data
- Changes to archived images with time, date and user
- Login and logout, and failed attempts to log in
- Service sessions (local or remote)
- Software updates, as well as backup and restore

In addition the highest original number of images is recorded, to compare the current number of images.

Audit trails must be kept for a number of years. It is the responsibility of the system administrator to ensure that the relevant log files are archived according to the requirements that apply to your institution and country.

The system administrator is the only user who has access to the audit trails via a dedicated viewer.

For larger systems, a separate database server can be made available for audit trails.

## Encryption

With Visage 7, data is transmitted in accordance with the SSL (Secure Socket Layer) standard. For this purpose, a security certificate, which is essential to guarantee the security of data transfer, is installed automatically on your computer the first time you start the program. Data is then automatically transmitted over a secure connection. Furthermore, it is advisable to additionally encrypt the images using the encryption function of Visage 7 Web Client for transmission.

For Visage 7 Web Client users who access the web server over the Internet, the system administrator can set data encryption as a default for each data transfer.

The system administrator can also make sure that these Internet users cannot deactivate data encryption themselves.

## Overview of the Visage 7 product documentation

The Visage 7 product documentation distinguishes between three user groups and the tasks that these groups typically perform.

- Clinical users

These users access the Visage 7 server from a Visage 7 Web Client or Visage 7 Client in order to review 2D, 3D, or report data (Visage 7 Web Client) or to view and process 3D volume data (Visage 7 Client).

The Visage 7 Web Client and Visage 7 Client **user documentation** addresses this user group.

- System administrator

The system administrator of the hospital will perform system maintenance and adapt server configuration and database settings to changes in the system and network environment. This user group works on the administration platform.

The Visage 7 **administrator documentation** addresses this user group.

- Service personnel

This user group will install the system and subsequently perform initial system configuration. This group will need the **installation manual** for system installation and the administration documentation for initial system configuration.

In this section you will find an overview of the available product documentation as well as information on how to work with the Visage 7 user manuals, online guide, and online help systems.

## User and administrator documentation

The Visage 7 product documentation addresses the information needs of each of these user groups.

### User documentation

The Visage 7 Web Client and Visage 7 Client user documentation addresses clinical users.

It comprises:

- The **Visage 7 Web Client** user documentation

In these documents clinical users will find a complete description of the Visage 7 Web Client user interface and program functionality.

In the printed **user manual** you will find a complete description of all Visage 7 Web Client functions.

The **online guide** (this document) offers additional information and task-oriented descriptions presented in a step-by-step style. Online guides are available on your installation medium in English and German.

Visage 7 Web Client also features a **context-sensitive online-help system** which you can call up right from the user interface. The context-sensitive help topics explain all the user interface elements and features of the currently displayed screen in your native language. For the English and German user interface the online help system also contains task-oriented step-by-step instructions.

- The **Visage 7 Client** user documentation

The **user manual** (pdf file and/or printed manual) provides a complete description of all Visage 7 Client functions.

Visage 7 Client also features an **online-help system**, which you can call up from the Help menu. The various help topics explain the user interface of the client software.

#### Tip

You can download the user documentation as pdf files. Follow the corresponding link on the login screens.

## Administrator documentation

The Visage 7 administrator documentation supports system administrators in a hospital. It helps them with user management and adapting the system to changes in the overall network environment, if this becomes necessary.

The Visage 7 administrator documentation also helps service personnel with initial system configuration tasks right after system installation or update.

- The **Administration Manual**

This document is available as a pdf file on your installation medium. You can print out this document if you prefer reading on paper.

- The administration platform **Online Help System**

The Visage 7 administration platform features a context-sensitive online-help system.

The context-sensitive help topics explain the parameters you will find and the settings you can make on the various configuration screens. Whenever relevant, background information on selected topics is also given in the online help system.

## Service documentation

Installation instructions for single-server systems are available on your installation medium. Installation instructions for cluster systems and CS systems are available for Visage Imaging service personnel only.

## Release notes

Release notes contain additional useful information about the software. They focus on technical details. You can find the release notes document on your installation medium.



## Information on using the Visage 7 manuals

<b>Document structure</b>	<p>In order to help you locate relevant information in the Visage 7 manuals quickly, they are subdivided into chapters.</p> <p>In the <b>Visage 7 Web Client user manual</b> and <b>online guide</b> each chapter addresses a specific task or group of tasks relevant to your daily work with the product. For experienced users, <i>The Visage 7 Web Client Window</i> section serves as a concise reference guide.</p> <p>The <i>Table of Contents</i> and <i>Index</i> sections help you locate a topic quickly.</p>
<b>Layout conventions</b>	<p>To help you find and interpret the appropriate information, the following visual orientation aids are used here:</p> <ul style="list-style-type: none"><li>• Operating steps</li></ul> <p>Single-step actions are presented as plain text.</p> <ol style="list-style-type: none"><li>1. Operating steps in sequences of actions are numbered.</li></ol> <ul style="list-style-type: none"><li>• Bold text</li></ul> <p>Names of windows, menus, and functions are shown in bold typeface. Sections of text given particular emphasis are also highlighted in <b>bold type</b>.</p>
<b>Tips, notes, warnings</b>	<p>Tips, notes, and warnings are highlighted.</p> <div data-bbox="454 1117 1447 1255"><b>Tip</b> <b>Tips</b> provide additional useful information about a topic. Tips, for example, help you organize your work more efficiently.</div> <div data-bbox="454 1276 1447 1457"><b>Note</b> <b>Notes</b> mark text that you should pay special attention to. A note may, for example, emphasize a piece of information relating to the safety of functions, but where no direct danger is involved.</div> <div data-bbox="454 1478 1447 1619"><b>Caution</b> <b>Caution</b> is used to indicate the presence of a hazard, which can cause personal injury to a patient, or damage to the equipment.</div>

## Information on using the online help systems

The Visage 7 Web Client and Visage 7 Client user interfaces, and the Visage 7 administration platform feature an online-help system each.

**Calling up online help**

You can call up the online help system from any Visage 7 Web Client window.

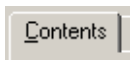


Click the help icon on the Visage 7 Web Client navigation bar along the left edge of the window to open the context-sensitive online help system.

The context-sensitive online help displays the help topic relevant to the window that is active when it is called.

**Tab cards**

The left half of the Visage 7 Web Client online help window shows tab cards for quick access to the help contents.



This tab card contains a table of contents similar to that of a printed book.



1. Double-click the book icon to display a topic and show subheadings.



2. Click the page with the question mark icon to display the text of a help page in the right half of the window.



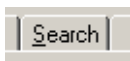
You can search for index entries here.

1. Enter a word you want to search for.

-Or-

Scroll through the alphabetical index.

2. Double-click an index entry to display the information about it.

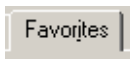


This tab card permits a full-text search.

1. Enter a word to search for.

2. Press the **RETURN** key.

All help topics containing this word will be listed.



On this tab card you can set bookmarks for help topics that are of particular interest to you.

1. Display the topic you want to add to the **Favorites** list.

2. Click **Add**.

**Links to other topics**

In various help topics you will find links that will take you to more detailed information about a subject.

Text links are shown in blue and underlined.

Links in overview graphics are shown in italics.

**Scrolling from topic to topic**

Use the **next** and **previous** icons in the footer of each help topic to scroll through the online help system topic by topic.

**Help window toolbar**

The upper part of the help window shows a number of icon buttons. Use these buttons to adapt the help window, scroll through topics, and print topics.



Shows the online help tab cards if they are hidden and then changes to the **Hide** button.



Hides the online help tab cards if they are shown and then changes to the **Show** button.



Returns to the previous topic.



Returns to the next topic (after you have clicked **Back**).



Prints the current topic on the set printer.



Shows a menu with more help functions.

---



# Starting and Ending the Program

This section tells you how to start Visage 7 Web Client, log onto the server, and close Visage 7 Web Client properly at the end of each session.

Depending on your system configuration, the type of data connection you are using to access the web server, and the settings made by your system administrator, you will use one of the following methods for calling up Visage 7 Web Client and logging onto the Visage 7 system.

When you have finished working with Visage 7 Web Client do not forget to log off from the system again.

## Calling up the login screen

Before attempting to start Visage 7 Web Client, make sure Microsoft Internet Explorer is installed on your PC.

See also *System requirements* on page 15.

Visage 7 Web Client will not work with older versions of the Microsoft Internet Explorer or Web browsers of other manufacturers. When you log onto the system, Visage 7 Web Client checks whether the correct browser is installed. If it is not, a message tells you which browser you need.

### Standard languages

The Visage 7 Web Client user interface is available in six languages. You choose a language when you call the Visage 7 Web Client login screen.

1. Connect to the Internet (or Intranet).
2. Start the Internet Explorer.
3. Enter the address (URL) of the Visage 7 server.
  - http://servername** (for the default user interface language)
  - http://servername/de** (for the **German** program version)
  - http://servername/en** (for the **English** program version)
  - http://servername/fr** (for the **French** program version)
  - http://servername/es** (for the **Spanish** program version)
  - http://servername/it** (for the **Italian** program version)
  - http://servername/pt** (for the **Portuguese** program version)

*Servename* is a placeholder for the name of the Visage 7 server on the network.

URLs that follow the convention of previous software versions (<http://servename/visagepacs/en> or <http://servename/radin/>) are also still valid.

### Customer-specific translation

If a customer would like to have the user interface translated into any other language than those listed above, a separate directory is available for this.

The customer-specific directory ... /cs contains a version of the user interface that can be translated into other languages.

The address of the login page in this case is:

**<http://servename/cs>** (for **customer specific** program version)

### Shortcuts

To speed up the call-up procedure for subsequent logins you can create shortcuts to the login screen.

1. Enter the URL of the Visage 7 server in the Internet Explorer address bar.
2. Select **Favorites > Add to Favorites** in the Internet Explorer menu.

-Or-



Reduce the Internet Explorer window so that it no longer covers the entire screen, and click this icon in front of the URL and drag it onto your Windows desktop.

3. Select Visage 7 Web Client in the **Favorites** menu of the Internet Explorer.

-Or-



Double-click the Visage 7 Web Client icon on your desktop next time you want to call up the Visage 7 Web Client login screen.

### Downloading the user manual and online guide

1. Click on the text link *Download user documentation* on the login screen.

The link takes you to a web page where you will find the user manual and online guide as pdf files in the language you have selected for the user interface.

2. You can download the pdf files from here onto your local PC in order to view it online or print it out.

### Microsoft Windows Vista

When you are calling the login screen from a Windows Vista system for the first time Visage 7 Web Client cannot be installed automatically.

1. Follow the link to a download web page that will be displayed instead of the login screen.
2. Click the link **Visage7\_WebClientInstall.msi** on this page.

This link will help you with installing Visage 7 Web Client on your computer

## Standard system login

After you have entered the address of the Visage 7 server, the Visage 7 Web Client login screen is shown.

1. Select one of these client types: **View**, **Classic**, **Expert**, **Expert Dual Monitor**, or **Expert Reading**.

-Or-

Call up the Visage 7 Web Client login screen in your preferred client type, e.g.:

**`http://servername/en/view`** (for client type **View**)

**`http://servername/en/classic`** (for client type **Classic**)

**`http://servername/en/expert`** (for client type **Expert**)

**`http://servername/en/2monitor`** (for client type **Expert Dual Monitor**)

**`http://servername/en/expertreading`** (for client type **Expert Reading**)

2. Enter your **user name** and **password**.

Visage 7 Web Client makes a distinction between upper and lower case letters.

3. Press the **RETURN** key or click the **Login** button.

The Visage 7 Web Client patient window opens.

If you are unable to log in, either the maximum permissible number of users may be logged in at the moment or your license does not support the selected client type. In this case, try logging on again a few minutes later or select another client type.

If Visage 7 Web Client still does not start, check the network connection or contact your system administrator.

### Dual monitor

In dual monitor mode you work with two monitors simultaneously. The operating elements and screen areas of Visage 7 Web Client are distributed over two monitors. This makes working with Visage 7 Web Client easier.

Dual monitor mode is only available if you have an **Expert** license and the required user privileges.

### Multiple sessions

If your administrator has activated this function for you, you can log on to several workstations with the same user data and continue on one workstation with the work you started on another one.

### Automatic client update

Every time you log onto the Visage 7 server, the server automatically checks whether a more recent version of the client software is now available. Client update starts automatically, unless your system administrator has disabled this option. A message is displayed in this case.

## Integrated Windows authentication

If your client is connected to the hospital network (Windows domain), you can work with Visage 7 Web Client without entering a user name and password. Your Windows login will be used instead.

### Note

Integrated Windows authentication is only possible for users whose accounts were imported in the Visage 7 system from Windows and for whom the integrated Windows authentication privilege has been set by the system administrator.

Before calling Visage 7 Web Client via integrated Windows authentication for the first time:

Start the Internet Explorer and call up the standard Visage 7 Web Client login screen once (e.g. <http://servername/en>).

After that use the following URL for calling Visage 7 Web Client via integrated Windows authentication:

**<https://servername/en/iwa>**

-Or-

**<https://servername/en/iwa/view>**

**<https://servername/en/iwa/classic>**

**<https://servername/en/iwa/expert>**

**<https://servername/en/iwa/2monitor>**

**<https://servername/en/iwa/expertreading>**

## Call-up from another software program

If you are working with other clinical applications on your PC you might be able to call up Visage 7 Web Client directly from such a program (e.g. a hospital or radiology information system (HIS/RIS) or electronic patient browser).

If Visage 7 has been integrated in the other clinical software application, the program will start automatically whenever you select one or more images and call up image display. You do not have to enter your login data every time you call up image display in this case. The selected images are immediately displayed in the Visage 7 Web Client viewer window.

If your Visage 7 installation includes the Visage 7 Client license both clients will be called up automatically when you select a patient and study on the HIS/RIS for which 3D volume data are available on the Visage 7 system. Joint OEM call of



course requires that the HIS/RIS has been configured to call Visage 7 with the correct parameters and that your Visage 7 user account holds appropriate user rights.

## Logging off from the web server

### Logging off from the server

You should always log off from the Visage 7 system.

If images are currently being loaded, please cancel loading with the **Esc** key before you log out.



Click this icon in the lower part of the navigation bar.

This logs you off from the Visage 7 system. The Visage 7 Web Client login screen is displayed again.

-Or-



Click this icon in the top right corner of the program window.

This logs you off from the Visage 7 system and also closes the Internet Explorer.

#### Tip

If you are working with a 1024x768 screen resolution the logoff icon in the lower left-hand corner of the navigation bar may not be visible. Press F11 for a full-screen display of the Internet Explorer in this case. In this view the logoff icon is always available.

#### Tip

Your system administrator can configure an HTML link to an Internet page after manual logoff.

### Automatic logoff

If Visage 7 observes no activity for a certain time (default setting: 15 minutes) a message box appears. You are prompted to confirm that you wish to continue working. If you do not answer you will be logged off automatically after a few seconds. The license you were using is now available for another user.

Only the system administrator can change the automatic logout time.



# Getting Started with Visage 7 Web Client

This section explains the typical structure and operating elements on the Visage 7 Web Client user interface. It also explains the general procedures and options for working with the Visage 7 Web Client application program and how to customize the Visage 7 Web Client window.

## Note

In these operating instructions we assume that you have worked with Windows application programs before. You should have a basic knowledge of how to use Web browsers and be familiar with operating Windows programs with a mouse.

## Configurable user interface

In these instructions we describe the maximum scope of available functions.

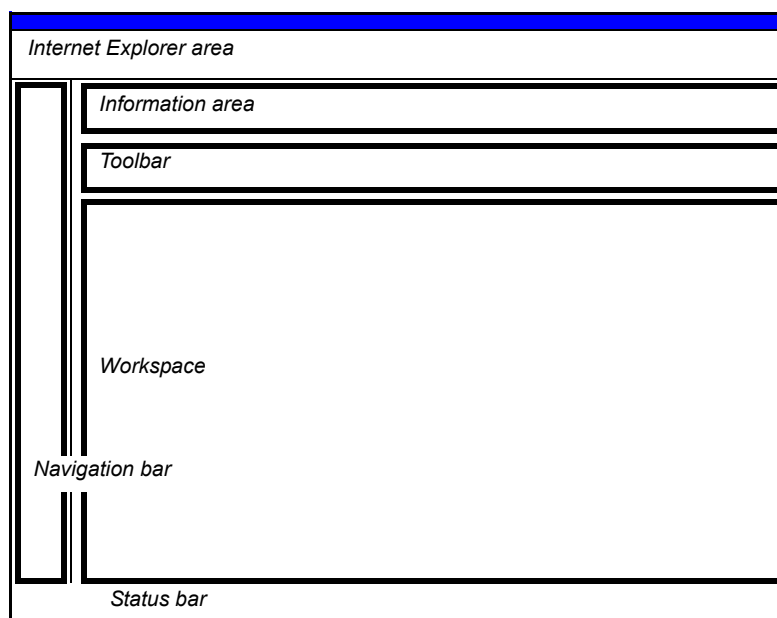
Visage 7 Web Client is, however, a software product whose user interface can be configured to suit your personal requirements and preferences to a great degree. Therefore, some of the functions and features which are described here may be permanently dimmed or not visible at all in your program installation. This means that your system administrator has disabled these functions because you do not need them in your daily work, or that your installation does not include all the available Visage 7 licenses.

Consult your system administrator if you need any of the functions described here but which are currently not available on your Visage 7 Web Client user interface.

## The Visage 7 Web Client window layout

Visage 7 Web Client is a web-based application program that makes use of the Microsoft Internet Explorer.

A Visage 7 Web Client window comprises the following elements and screen areas.



### Internet Explorer area

The upper part of the window contains the menu bar and possibly also the toolbar and address bar of the Microsoft Internet Explorer. These menus and icons are **not** active in Visage 7 Web Client.

Do **not** click this area while working with Visage 7 Web Client.

Selecting an Internet Explorer button by mistake will log you off from Visage 7 Web Client and take you back to the login screen.

**Never** use the **F5** key to update the Internet Explorer while working with Visage 7 Web Client, as this will log you off, too.

### Information area

In the patient window, this area shows the user name with which you are currently logged in. All other Visage 7 Web Client windows show data about the selected patient and study here.

### Navigation bar

With the icons of the navigation bar you can switch back and forth between the various Visage 7 Web Client windows, call up status information or online help, or log off from the web server.

### Toolbar

You use the icon buttons of the toolbar of each window to perform the various operating steps that can be carried out in this particular window.

In the viewer windows the toolbar will either be shown as a single row of icons or arranged in several rows of icons depending on your screen resolution and the number of configured icons.

**Workspace**

The workspace is where the selected patients, studies, or images are displayed in the various Visage 7 Web Client windows.

**Status bar**

The status bar at the bottom of the screen displays information about the status of the program, for example, about the progress made when searching. It also indicates if an action failed.

## Selecting functions and switching windows

In Visage 7 Web Client, all actions are started with icon buttons or popup menus.

### Navigation bar icons

With the icons of the navigation bar you can switch back and forth between the various Visage 7 Web Client windows, call up status information or online help, or log off from the web server.



Click this icon to display the study/series window, for example.

### Toolbar icons

If one particular operating step does not make sense with the current selection of data, the corresponding toolbar icon is dimmed (i.e. grayed out).

While an icon is displayed pressed, the mode it activates (e.g. interactive cine mode) remains active. To terminate one mode, select another.



Click on a toolbar icon to activate a function.



If a toolbar icon looks like this, the corresponding function is not available for the current selection of data.



If a toolbar icon is activated it is displayed “pressed in” and looks like this.

**Locking/unlocking the viewer toolbar**

In the viewer windows you can hide the toolbar so that you have more space for showing the images. The toolbar will automatically reappear when you move the mouse pointer over the screen area where the toolbar is usually shown.



Click **Auto-Hide Toolbar** to hide the toolbar.

-Or-



Click **Lock Toolbar** to show the toolbar permanently again.

**Tip**

**Auto-Hide Toolbar** is particularly useful if you are working with low screen resolutions and the viewer toolbar is shown in several rows of icons, which require a lot of screen space.

**Drop-down icon bars**

Some icons on the toolbar of the viewer windows represent a drop-down icon bar. This is indicated by a small black triangle pointing downwards.



1. Click on the icon on the toolbar with the left mouse button and keep the mouse button pressed.
2. Select a function or option by moving the mouse pointer down the icon bar until it points to the relevant sub-icon.
3. Release the mouse button while the cursor is still pointing to the option or function you wish to activate.

**Tool Tips**

All the icons in the navigation bar and on the toolbars are assigned tool tips.



Position the mouse pointer on an icon and let it rest there for a short time.

A brief explanation of this icon appears.

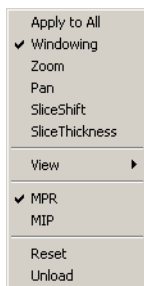
## Popup menus

In the image preview, viewer and basic MIP/MPR viewer windows, a number of image selection and processing options are also available from a popup menu, which you can call up in the workspace area.

In the viewer windows many image display functions are available from both the toolbar and popup menu. Only a few functions are available from the popup menu only.

The basic MIP/MPR viewer has no toolbar. All image display and processing functions are available from the popup menu here (or as keyboard shortcuts).

Popup menus are context-sensitive. This means they offer you only those functions that make sense with the currently selected image(s) or functions or in the currently selected screen section.



1. Right-click in the image area.

The popup menu opens.

2. Select an item from the popup menu to run or activate this function.
3. Select another item from the popup menu or select a menu item a second time to deactivate the function again.

## Scrolling through images

In order to scroll through loaded images you can use the scroll bar, the keyboard, or the wheel mouse.

### Scroll bars

Scroll bars are displayed along the right and sometimes bottom edge of windows when the content is too large to be displayed all at once.

Click a right/left (or up/down) arrow button to scroll the current display.



## Keyboard



Use the keys on your keyboard for scrolling.

## Wheel mouse

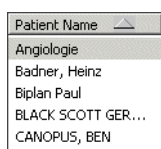
If you have a wheel mouse (a mouse with a small wheel between the right and left buttons), you can use it to scroll.



Turn the wheel to scroll in the display.

## Sorting list views

The entries in the patient list, and in the study and series lists can be sorted by any column.



1. Click a column header to sort by the entries in this column.

The arrow symbol tells you whether you have sorted in ascending or descending (alphabetical, numeric, or chronological) order.

2. Click again to reverse the sort order.

### Tip

The selected sort order will still be selected the next time you start the program.



## Selecting data and objects

You must always select entries in lists, images, or graphic objects before you can process them.

### Selecting one object



Click a list item, image, or graphic object.

A selected list item is color-highlighted. A selected image has a bright border. A graphic object has grab handles.

### Multiple selection

You can apply some actions to two or more objects at once.

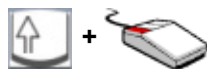
For example, if you have the right to delete patient data on the web server, you can select multiple patients and delete them all from the Visage 7 database in one step.

To select multiple list entries, images, or objects in one go:



Click various objects while holding the **Ctrl** key down to select individual objects.

-Or-



Click the first object and hold the **Shift** key down while you click a second object to select all objects between first and the second object.

## Adjusting a window view

### Full-screen or window view

While working in Visage 7 Web Client you can resize the Internet Explorer.



Press function key **F11** on your keyboard to toggle between full-screen (best use of screen) and standard view.

### Showing and hiding a toolbar

Select **View > Toolbar** on the menu bar of the Internet Explorer to show or hide the Internet Explorer's toolbar.

#### Tip

Since almost all Internet Explorer functions are inactive while Visage 7 Web Client is running we recommend you keep the Internet Explorer toolbar hidden.

### Showing and hiding a status bar

Select **View > Status Bar** on the menu bar of the Internet Explorer to show or hide the Internet Explorer's status bar.

**Tip**

It is advisable to have the status bar displayed while working with Visage 7 Web Client to observe messages, progress reports, and explanations.

---

**Adjusting column width**

You can change the width of the columns in the patient, study, and series lists.

1. Place the mouse pointer precisely on the border between two column headers.

The mouse pointer now looks like this: 

2. Hold the mouse button down and drag the column border right or left to adjust the width of the column.

-Or-

Double-click the border between two column headers to display the column to the left of the border with the width of its longest item.

# The Visage 7 Web Client Window

This section describes the screen layout and the windows you use when working with Visage 7 Web Client. You will find a brief functional description of the individual windows, the icons, and other elements here.

You open the Visage 7 Web Client windows via the navigation bar on the left-hand side of the screen.

## Tip

As an experienced user, you can use this section as a quick reference guide.

## Navigation bar

Using the icons on the navigation bar you can quickly switch to any of the other Visage 7 Web Client windows. Switching to another window will not load any data into that window. Instead the data you last loaded to that window is displayed.

### Dual monitor

If you are working with two monitors, the navigation bar appears at the left edge of the left monitor and on the right edge of the right monitor. It contains the same icons on both monitors.



#### Audit Warning

A message is displayed. It informs you that only authorized users are permitted to use Visage 7 Web Client and that all your actions may be recorded.

This icon is displayed only if the audit trail license is installed and display of this icon has been configured.



#### Patient Window

Lists all patients that were found by the last database query.

You can select a patient here to display his or her study list next. When you have logged on to the client type Expert Reading, the patient window is shown in worklist view.



#### Study/Series Window

Shows all examinations and series of the selected patient. If you activate the preview area, you will see preview images of the selected study or series in the right half of the window.

**Image Preview (not for dual monitor)**

Shows one or all series of an examination as thumbnails. You can select individual images, or one or more series and load them into the viewers.

**Report Window**

If a report is stored on the Visage 7 server for a selected study, you can view the report text in this window.

-Or-

**Report with Image**

You can display images of a study together with the report text.

**Viewer 1**

Displays the images of a selected study, series, or individual selected images in viewer 1.

**Viewer 2**

Displays the images of a selected study, series, or individual selected images in viewer 2.

**Compare Mode (vertical)**

Splits the screen down the center and displays the images loaded in viewer 1 on the left-hand side and the images loaded in viewer 2 on the right-hand side.

**Compare Mode (horizontal)**

Splits the screen across the center and displays the images loaded in viewer 1 in the upper half of the screen and the images loaded in viewer 2 in the lower half.

**Basic MIP/MPR Viewer**

Displays the basic MIP/MPR viewer (only possible for image data that is suitable for 3D reconstruction).

**Display Protocol Viewer**

Shows the loaded images in a screen layout that has been optimized for primary reading. This icon and viewer are only available if you have logged on to the client type Expert Reading.

**Status information**

Displays information about all data transfer jobs in the network as well as a list of all logged on users.

**Help**

Calls a context-sensitive online help topic with an explanation of the window that is currently active.

**Logoff**

Logs you off from the Visage 7 server.

## Patient window



In the patient window you can search for the patient whose images you wish to re-view.

You can search for the patient in the local database (web server) or in the database of a configured DICOM partner.

Entering filter and search criteria will make searching easier.

### Note

To ensure the confidentiality of patient data, the system administrator will, as a rule, restrict which examinations you are able to access. As a referring physician you may, for example, only be able to view the data of your own patients.

### Dual monitor

When you are working in dual monitor mode, the patient list is spread over both monitors. The filter elements are shown on the left monitor only.

Information area  
(patient window)

Filter parameters

Search criteria

System messages

Toolbar (patient window)

Data source

Patient list (local) or

Response list (network node)

Navigation bar

Visage PACS - Microsoft Internet Explorer

File Edit View Favorites Tools Help

**Patient List (dr. x)**

Study Date: All Patient Name: Study ID:

Modality: All Patient ID: Study Description:

Physician: All Patient Comment: Accession No:

Location: All Date of Birth: YYYY MM DD

Insertion Date: All

Interpretation Status: All 37 Patients found

No Filter

Visage PACS Web

Patient name	Patient ID	Date of Birth	Sex	Modalities	Patient Comment	Report	Delete Protect
A_ILL_INT_TOP,	FLTOP01	1922-07-24	F	RF	-	-	-
Abdomen/Kidney	DB	1947-12-01	M	RF	-	-	-
Amato Terence	000012	1965-03-17	F	HC	-	-	-
ANEVRYSM	NEURO	-	O	XA	-	-	-
Angiologie	Angi	1999-07-01	O	CT	-	-	-
anonym_pt	anonym_pt	1900-01-01	O	PT	-	-	-
AUTOMINTERACTIV...	-	1924-01-26	M	XA	-	-	-
AVE+ ABDOMEN	0000002019	1978-10-10	M	CT	-	-	-
Biplan Paul	192837465	1967-05-25	M	XA	-	-	-
CANOBUS BEN	29191	1985-09-18	O	CT	-	-	-
Dilow Raleigh Ada	291101	1911-01-01	M	GM	-	-	-
HAND PATIENT 2	9946122	-	M	CR	-	-	-
HSA Circle of Willis	421876	-	M	CT	-	-	-
INSTAN, JERRY	8171	-	F	CT	-	-	-
Interesting Case	Testpatient	1940-03-05	F	CR	-	-	-
Joe's Shoulder	846464	-	O	MR	-	-	-
Johnson Roberta	123-45-6789	1923-10-16	F	XA	-	-	-
Lancelot Kaycee Ma...	234567	1880-05-07	F	CR	-	-	-
Larry's L Spine	656565	-	O	MR	-	-	-
MANUS DEXTER	-	1952-04-23	M	XA	-	-	-
MDP_CHILD_01,	FLTOP05	1997-03-11	F	RF	-	-	-
MDP_TOP	FLTOP03	1920-03-05	F	RF	-	-	-


Query finished

Trusted sites

## Information area (patient window)

This area of the patient window shows the user name you are logged in with.

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	<b>Hide/show filter criteria</b>
	Use this icon for collapsing (or expanding) the filter parameters and search criteria section of the screen.
<b>Patient List</b>	Active window where you are now.
<b>User name</b>	User currently logged in.

---

## Filter parameters

Here you select criteria for filtering the patient list.

---

<b>Study Date</b>	<p>Here you can select a period. After a database query, the patient list will only show patients examined over this period.</p> <p><b>Today</b> - lists all patients examined today.</p> <p><b>Yesterday</b> - lists all patients examined yesterday.</p> <p><b>The last X days</b> - lists all patients examined over the last X days.</p> <p><b>Date</b> - lists all patients examined on this day.</p> <p><b>From date to date</b> - lists all patients examined within the stated period.</p> <p><b>All</b> - lists all patients, irrespective of examination date.</p>
<b>Modality</b>	<p>Here you can filter the patient list according to modality.</p> <p>Click the ▼ icon next to the filter parameter <b>Modality</b>.</p> <p>Check one or more modalities.</p> <p>After a new database query, only patients examined with this modality or these modalities will be shown.</p>
<b>Physician</b>	<p>Here you can filter the patient list according to the name of the <b>referring, performing, and/or reporting physician</b>.</p> <p>Click the ▼ icon next to the filter parameter <b>Physician</b>.</p> <p>Check the box <b>Referring physician</b>, <b>Performing physician</b>, and/or <b>Reporting physician</b> and type the name of the physician. Or type A for all physicians whose name begin with A, for example.</p> <p>-Or-</p> <p>Open a list of all names by clicking on the ▼ icon behind an entry field. A list drops down with all referring, performing, or reporting physicians of the studies you have access to. Select a name.</p> <p>If you are searching in the network, the patient list can only be filtered according to the referring physician.</p>

---

<b>Location</b>	<p>Here you can filter the patient list according to the patient's ward or the name of the institution where the patient was examined.</p> <p>Click the ▼ icon next to the filter parameter <b>Location</b>.</p> <p>Select a <b>Ward</b> or <b>Institution Name</b>.</p>
<b>Insertion Date</b>	<p>Here you can sort the patient list according to the date when the patients' data were transferred to the web server.</p> <p><b>Today</b> - lists all patients whose studies were transferred to the web server today.</p> <p><b>Yesterday</b> - lists all patients whose studies were transferred to the web server yesterday.</p> <p><b>The last X days</b> - lists all patients whose studies were transferred to the web server during the last X days.</p> <p><b>Date</b> - lists all patients whose studies were transferred to the web server on that particular day.</p> <p><b>From date to date</b> - lists all patients whose studies were transferred to the web server within the stated period.</p> <p><b>All</b> - lists all patients, irrespective of when their studies were transferred to the web server.</p>
<b>Interpretation Status</b>	<p>Here you can filter the patient list according to the processing status of procedure steps:</p> <p><b>SCHEDULED</b> - lists all patients whose studies contain procedure steps that are scheduled for interpretation.</p> <p><b>IN PROGRESS</b> - lists all patients whose studies are currently being reviewed in one of the Visage 7 Web Client installations in your network.</p> <p><b>DISCONTINUED</b> - lists all patients whose studies contain procedure steps with interpretation status discontinued.</p> <p><b>COMPLETED</b> - lists all patients whose studies contain procedure steps with interpretation status completed.</p>

## Search criteria






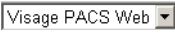


Here you can enter search criteria for a database query. If you do not remember a name or number you can use wildcards in your search. (E.g. **Mil** to find **Miller**, **Milford**, **Miltner**, or **\*mil** to find all the above and also **Hamilton**, or **AB??34** to find **AB1234**, **AB0034**, and **AB11345678**.)

<b>Patient Name</b>	<p>Searches for a patient by name.</p> <p>Enter the patient name in the format: <i>last name first name middle name prefix suffix</i>. For example: <i>Doe John Jack Dr.</i> for <i>Dr. John J. Doe</i>.</p>
<b>Patient ID</b>	Searches for a patient ID.
<b>Patient Comment</b>	Searches for a patient whose studies contain a specific comment.

<b>Date of Birth</b>	Searches for a patient by date of birth.  Use the date format indicated next to the search box. (Your system administrator can configure this format for you). Also remember to enter the complete date of birth here (day + month + year). You cannot, for example, search by year of birth only.
<b>Study ID</b>	Searches for a patient with this study ID.
<b>Study Description</b>	Searches for a patient with this study description.
<b>Accession Number</b>	Searches for a patient with this accession number.

## Toolbar (patient window)

In the patient window you will start all processing steps with the icons of the toolbar.

	<b>User-defined filter</b> You can select a predefined filter here.
	<b>Reset to Default Filter</b> Activates the filter defined as the default filter.
	<b>Set Filter Properties</b> The <b>Personal Settings</b> dialog box opens. You can define your own filters here.
	<b>Reset Filter Settings</b> All the filter parameters you entered are removed. Click <b>Start Data Query</b> to display the unfiltered patient list again.
	<b>Reset Input Fields</b> All the search criteria you entered are removed. Click <b>Start Data Query</b> to display a longer patient list again.
	<b>Data source</b> Here you select where to search for data: on the local web server database or on a DICOM network node.
	<b>Start Data Query</b> Starts a data query with the current filter and search criteria in the selected data source. As a result the patient list of the web server or a response list from a DICOM node will be displayed.
	<b>Cancel Data Query</b> A query currently in progress is stopped. All patients found so far are displayed.



**Retrieve Study from DICOM Node**

If you did not request data in the local database, but on a network node, you will see the response list of the DICOM node in the patient window. If you find the patient you are looking for in this list, you nevertheless cannot work with this data immediately. You must first copy the patient to the local database with this icon.

This icon is dimmed while the data source web server is selected, or while no patient is selected in a network response list.

**Query Patient**

This icon is active if a patient was selected in the local patient list and then a DICOM partner was selected in the data source drop-down list.

The patient name and the patient ID of this patient are copied into the search criteria boxes and the search for this patient is started on the DICOM partner.

**DICOM Send**

Opens a dialog box. Select the address(es) in your DICOM network to which you want to send the selected patient(s).

**DICOM Quick Send**

Sends the selected patient(s) to one or several DICOM nodes immediately. (Your system administrator has defined these addresses for you.)

**Forward**

For a better overview the patient list does not display all patients found at a time.

After a very generic patient search that results in more patients found, click this icon to page through the list of all patients found.

**Backward**

Click this icon to page backward through the list of all patients found.

**Set Delete Protection**

Delete-protected patients cannot be deleted (neither automatically by the program nor manually by the user).

**Remove Delete Protection**

Cancels delete-protection for the selected patient(s).

**Delete Patients**

The selected patient(s) is/are deleted from the local database if delete protection is not active.

The status bar shows the progress of deletion. You cannot continue your work until deletion has been completed.

**Change Group Assignment**

The **Change Group Assignment** dialog box opens. Here you can define which user groups have access to the selected patients.

**Change User Assignment**

The **Change User Assignment** dialog box opens. Here you can define which users have access to the selected patients.

**Export Patient**

The data of the selected patient(s) is exported. The data is first written to a directory on the server and then written to CD or DVD depending on the configuration. If you use a CD or DVD producer station, disks can be recorded automatically. Next to the icon the volume of data that is stored for the selected patient(s) in the Visage 7 database is displayed.

**Launching Application**

Starts another web application if your system administrator has configured this for you. The icon is only active if you have selected a patient.

## System messages

This part of the patient window shows important messages from the system.

## Patient list (local)

The local patient list shows all patients found in the web server database who match the search criteria, and to whom you have access. The patient list contains only *one* entry for each patient even if several studies exist for this patient.

**Tip**

You can sort the list by clicking on a column header.

<b>Patient Name</b>	Name of the patient
<b>Patient ID</b>	Patient's identification number
<b>Date of Birth</b>	Date of birth in YYYY-MM-DD format
<b>Sex</b>	<b>M</b> = male, <b>F</b> = female, <b>O</b> = other (unknown)
<b>Modalities</b>	Modalities used to examine the patient
<b>Patient Comment</b>	Comment text about the patient
<b>Report</b>	<p><b>Yes</b> - a report exists on the Visage 7 server for one of this patient's studies.</p> <p><b>No</b> - no report exists on the Visage 7 server.</p> <p>In the study/series window you can query for reports on configured report network nodes.</p>
<b>Delete Protect</b>	<p><b>Yes</b> - this patient cannot be deleted</p> <p><b>No</b> - this patient can be deleted</p>
<b>Study Date</b>	<p>Date and time of the study in the format: YYYY-MM-DD and hh:mm:ss (24-hour clock).</p> <p>If more than one study exists, the date of the most recent study is displayed.</p>
<b>Insertion Date</b>	Date and time when the patient data was sent to the Visage 7 server.

## Response list (network node)

If you selected a network node as the data source instead of querying the local Visage 7 server, you will see the response list of the DICOM node instead of the local patient list. Here a patient name may be listed more than once as each entry represents exactly one study.

### Tip

You cannot load patient data directly from the response list of a DICOM node into the study/series window. You must first copy a patient to the local database by double-clicking the patient entry, or with the **Retrieve Study from DICOM Node** icon.

<b>Patient Name</b>	Name of the patient.
<b>Patient ID</b>	Patient's identification number
<b>Study Date</b>	Date of the study in YYYY-MM-DD hh:mm:ss format.
<b>Date of Birth</b>	Date of birth in YYYY-MM-DD format
<b>Sex</b>	<b>M</b> = male, <b>F</b> = female, <b>O</b> = other (unknown)
<b>Accession Number</b>	Job number of the patient in the HIS/RIS (hospital or radiology information system)
<b>Study Description</b>	Description of the study
<b>Number of Images</b>	States how many images are stored for this study on the selected network node.
<b>Referring Physician</b>	Name of the referring physician
<b>Archive Status</b>	<p>(archive option only)</p> <p>Here you can monitor the status of archiving of this study. The archive status tells you about the availability of the study in the archive.</p> <p><input checked="" type="checkbox"/> Completely archived</p> <p><input type="checkbox"/> Partially archived</p> <p><input type="checkbox"/> Not yet archived</p>
<b>Patient Comment</b>	Comment text about the patient.

## Study/series window



The study/series window contains all studies, series, and presentation states of the patient currently selected in the patient list.

You use the study/series window to select a study, series, individual images, or a presentation state for display in one of the image viewers. To facilitate image selection you can display the images of a study as thumbnails in the right screen half of the study/series window.

### Series and presentation state tab cards

A presentation state comprises all those images of a study that the reporting physician considered particularly important. Presentation states are compiled at the diagnostic workstation that sends the study to the web server.

A presentation state also preserves the image display settings (such as window values, or zoom/pan settings) that were used at the time when the presentation state was created. Presentation states are usually available in both compression levels (A and B) unless matrix reduction has been configured for any of the images they refer to. In that case no presentation states are available for that particular compression level and the study may contain a different number of presentation states for level A and B.

### Dual monitor

In dual monitor mode, the study/series window is shown on the left monitor. The right monitor shows the preview area. It is *not* possible to hide the preview area in dual monitor operation.

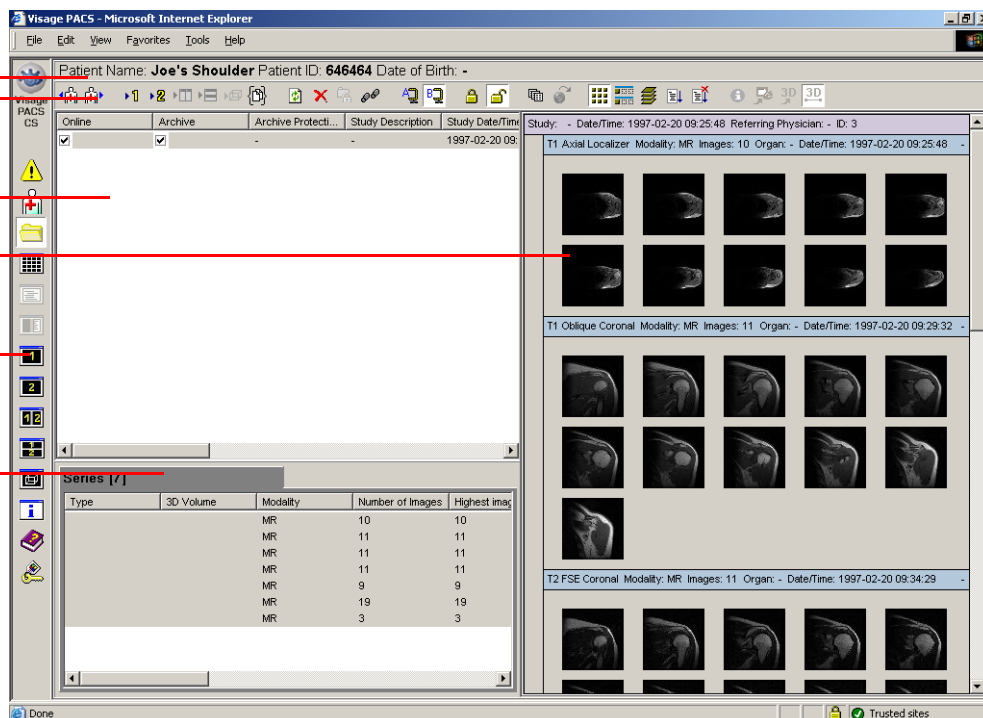
Information area (study/series window)  
Toolbar (study/series window)

Study list

Image preview

Navigation bar

Series list /  
Presentation state list











## Information area (study/series window)

This area of the study/series window provides information about the loaded patient.

<b>Patient Name</b>	Name of the loaded patient.
<b>Patient ID</b>	Identification number of the loaded patient.
<b>Date of Birth</b>	Date of birth of the loaded patient.

## Toolbar (study/series window)

In the study/series window you will start most of your processing steps with the icons of the toolbar. But note that a popup menu is also available for selecting images in the image preview area.

	<b>Previous Patient</b> Shows the studies and series of the patient above the patient currently selected in the patient list.
	<b>Next Patient</b> Shows the studies and series of the patient below the patient currently selected in the patient list.
	<b>Show all Studies</b> When Visage 7 Web Client is called from another application via the OEM interface, this icon shows all studies of the current patient.
	<b>Load into viewer 1</b> The selected study, series, presentation state, or individual images are loaded into viewer 1.
	<b>Load into viewer 2</b> The selected study, series, presentation state, or individual images are loaded into viewer 2.
	<b>Load to Compare Mode</b> Loads the first two series of a selected study, or two selected series, or two images into compare mode (side by side).
	<b>Load to Compare Mode</b> Loads the first two series of a selected study, or two selected series, or two images into compare mode (top and bottom).
	<b>Load to Basic MIP/MPR Viewer</b> Loads the selected series into the basic MIP/MPR viewer.  Only CT or MR series that are suitable for 3D reconstruction can be loaded into the basic MIP/MPR viewer.

**Load all series as one**

Click this icon before you load an entire study into one of the viewers to merge all images of this study into one “viewing series”.

**Refresh**

The study/series window is updated.

**Delete object**

Pops up a dialog box and allows you to select what you want to delete from the web server: the entire study, the study reports (if available), or a presentation state, or one or several selected series only.

**Archive Protection**

Sets or removes archive protection for the selected study.

**Change Procedure Step**

Procedure steps are tasks in the diagnostic reading workflow. With Visage 7 Web Client you can follow up on the task interpretation from scheduling this task to completion.

*For studies for which no procedure step exists:* Creates a new procedure step and allows you to assign the new procedure step a priority.

*For studies for which a procedure step exists:* Allows you to delete the procedure step, mark it as completed (or reset it to scheduled), or change its priority.

**Compression Level A**

Transfers images with compression level A. In compression level A, the images are usually only slightly compressed and without loss of quality. Your system administrator defines the compression rules for your system.

**Compression Level B**

Transfers images with compression level B, which compresses the images even more.

Note that compressed images do not contain the full volume of data of the original. The diagnostic quality of the images is affected as a result.

**Encrypted Data Transfer**

The images are transmitted encrypted.

**Non-encrypted Data Transfer**

The images are transmitted without encryption.

**Query Report**

Requests a report on the currently selected study from the configured report network node. If a report on the selected study already exists on the Visage 7 server, the report is downloaded again and the existing report is overwritten.

**Use Local Cache**

If this icon is activated, the images you download from the web server are stored in your local cache memory.

When you load images into a viewer, Visage 7 Web Client searches the local cache first and only retrieves data from the web server if no images are found in the local cache.

This option speeds up your workflow if you need to load and review one study several times during one Visage 7 Web Client session. It is recommended for networks with low data transfer rates.

**Preload Study**

Loads all images of a selected study into the local cache for the duration of your session. When you subsequently load these images into a viewer and move on to this viewer the images are displayed immediately.

This icon is only active if **Use Local Cache** has also been selected.

**Image Preview on/off**

Switches display of the image area on or off.

**Truncate Thumbnails for Large Series**

Toggles thumbnail display for large series: one or all thumbnails per series are shown in the image preview section.

**Show Thin Slice Series**

When this option is selected the series list will list both thin slice series (original scan series) and thick slice series (generated image series which permit faster loading and browsing).

When this option is deselected only thick slice series are shown in the series list.

**Select all previews**

Selects all images in the preview area.

**Deselect all previews**

Deselects all images currently selected in the preview area.

**DICOM Information**

Shows the DICOM information of the image selected in the preview area.

**Launching Application**

Starts another web application if your system administrator has configured this for you. The icon is only active if you have selected a study.

**DICOM Send**

Opens a dialog box. Select the address(es) in your DICOM network to which you want to send the selected study (or studies) or series.

**DICOM Quick Send**

Sends the selected study (or studies) or series to one or several DICOM nodes immediately. (Your system administrator has defined these addresses for you.)

**Display as 3D volume**

Shows the selected data in the Visage 7 Client for advanced 3D evaluation.

**Automatic Synchronization with 3D volume**

Select this option to ensure that both the Visage 7 Web Client and the Visage 7 Client will always show images of the same patient.

**Marked images filter**

You can filter the study/series lists so that only images marked with a star or flag (or both) are displayed.

These flags are, however, only available in a Siemens diagnostic environment.

## Study list

This list shows all studies of the patient selected in the patient list.

**Online Status**

(for archive option only)

The online status tells you about the availability of the study in the local database.



Completely available



Partially available



Not available

**Archive Status**

(for archive option only)

The archive status tells you about the availability of the study in the archive.



Completely archived



Partially archived



Not yet archived

**Archive Protection**

(for archive option only)

**Yes** - study cannot be archived

**No** - study can be archived

**Study Description**

Description of the study

**Study Date/Time**

Date and time of the study in the format: YYYY-MM-DD and hh:mm:ss (24-hour clock).

**Referring Physician**

Name of the referring physician

**Study Comment**

Comment text about the study

**Accession Number**

Accession number of the study

**Study ID**



Study's identification number










<b>Report</b>	- no report is stored on the Visage 7 server for this study; <b>1 (2, 3, ...)</b> - one or more reports are stored on the Visage 7 server for this study. When you display or edit the report the most recent of these report versions will be shown.
<b>Procedure Step</b>	Indicates whether a procedure step exists for this study. Visage 7 only supports procedure steps of the type <i>Interpretation</i> in this software version.
<b>Status</b>	Indicates the status of the procedure step: scheduled, in progress, discontinued, or completed.
<b>Performer</b>	Indicates the name of the Visage 7 Web Client user who is currently reviewing the images of this study, or who completed this procedure step.
<b>Priority</b>	Low, medium, or high. You can use this column to sort the study list, for example.
<b>Non-viewable Series</b>	Number of series that cannot be displayed

## Series list

This tab card lists all series that are stored on the web server for the current study.

<b>Type</b>	With <b>Show Thin Slice Series</b> selected both the original scan series (thin slice series) and thick slice series are listed in the series list. When this icon is not selected only thick slice series are displayed.   Thin slice series (original scan series, series with a large number of images)  Thick slice series (generated image series, series with a smaller number of images)
<b>3D Volume</b>	(Visage 7 Client option only) Indicates if a 3D volume data set is available for this series on the system. Only series with a 3D volume data set can be loaded into the Visage 7 Client.
<b>Modality</b>	Modality used to create the series
<b>Number of Images</b>	Total number of images of this series on the web server.
<b>Highest Image Number</b>	Highest available image number For modalities that work with single frame images, comparing the <i>Number of images</i> and the <i>Highest Image Number</i> helps you determine if all images of this series have been transferred to the web server.
<b>Preloaded images</b>	Number of images in the local cache
<b>Organ</b>	Examined organ or body part
<b>Description</b>	Description of the series

<b>Performing Physician</b>	Name of the performing physician
<b>Series Date/Time</b>	Date and time of creation of the series in the format: YYYY-MM-DD and hh:mm:ss (24-hour clock).
<b>Series number</b>	Number of this series within the study
<b>Marked images</b>	In these columns you will find information about whether images in this series have been marked with a star or a flag (only relevant if the imaging systems in your hospital support marking images).
<b>Exam status</b>	Contains an icon that indicates the current examination status: (These flags are only available in a Siemens diagnostic environment.) <div>  Prepared                Reported                Signed off                Unknown           </div> <p>If a new exam status has not yet been issued (status <i>New</i>), this column remains empty.</p>
<b>Report Status</b>	Contains an icon that indicates the current report status in the HIS/RIS: (These flags are only available in a Siemens diagnostic environment.) <div>  Dictated                Written                Validated           </div>

## Presentation state list

This tab card lists all presentation states that are stored on the web server for the current study and with the currently selected compression level (A or B).

<b>Label</b>	Presentation state label as entered on the diagnostic workstation where the presentation state was created.
<b>Description</b>	Descriptive text for this presentation state.
<b>Content creator</b>	Name of the user who created the presentation state object.
<b>Creation Date/Time</b>	Date and time when the presentation state was created in the format YYYY-MM-DD and hh:mm:ss (24-hour clock).

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<b>No. of ref. images</b>	Number of referenced images in this presentation state object.
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## Image preview

The image preview of the study/series window shows the images of the selected study or series as miniature images (thumbnails).

You use the preview area to select images or series. You can select an entire study, complete series, a presentation state or individual images from one or several series and then load them into a viewer. With large series that contain a large number of images and slow data transmission lines, selecting and loading only those images that are relevant to your diagnostic problem will save time.

Moreover the image preview contains information about the study, series, and the images they contain. Refer to the preview window for details about:

- *Information about the study*
- *Information about a series*
- *Thumbnails*
- *Image preview popup menu*

## Preview window



The preview window shows the images of the selected study or series as miniature images (thumbnails).

Unlike the preview area of the study/series window, this preview window shows the thumbnails over the full width of the browser window.

You use the preview area to select images or series. You can select an entire study, complete series, or individual images from one or several series and then load them into a viewer. With large series that contain a large number of images and slow data transmission lines, selecting and loading only those images that are relevant to your diagnostic problem will save time.

Moreover the image preview contains information about the study, series, and the images they contain.

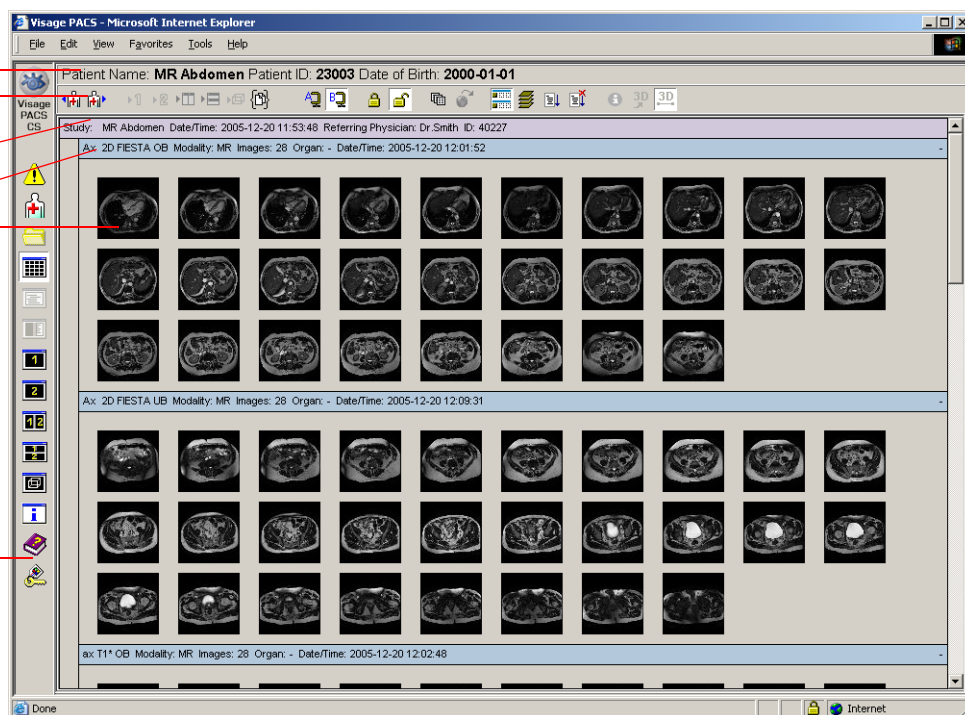
Information area (preview window)

Toolbar (preview window)

Information about the study  
Information about a series

Thumbnails

Navigation bar



## Information area (preview window)

This area of the preview window provides information about the loaded patient.

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<b>Patient Name</b>	Name of the loaded patient.
<b>Patient ID</b>	ID of the loaded patient.
<b>Date of Birth</b>	Date of birth of the loaded patient

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## Toolbar (preview window)

In the preview window you will start most of your processing steps with the icons of the toolbar. But note that a popup menu is also available for selecting images.

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	<b>Previous Patient</b> Shows the studies and series of the patient above the patient currently selected in the patient list.
	<b>Next Patient</b> Shows the studies and series of the patient below the patient currently selected in the patient list.
	<b>Load to Viewer 1</b> The selected study, series, or individual images are loaded into viewer 1.
	<b>Load to Viewer 2</b> The selected study, series, or individual images are loaded into viewer 2.
	<b>Load to Compare Mode</b> Loads the first two series of a selected study, or two selected series, or two images into compare mode (side by side).
	<b>Load to Compare Mode</b> Loads the first two series of a selected study, or two selected series, or two images into compare mode (top and bottom).
	<b>Load all series as one</b> Click this icon before you load an entire study into one of the viewers to merge all images of this study into one "viewing series".
	<b>Compression Level A</b> Transfers images with compression level A. In compression level A, the images are usually only slightly compressed and without loss of quality. Your system administrator defines the compression rules.

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**Compression Level B**

Transfers images with compression level B, which compresses the images even more.

Note that compressed images do not contain the full volume of data of the original. The diagnostic quality of the images is affected as a result.

**Encrypted Data Transfer**

The images are transmitted encrypted.

**Non-encrypted Data Transfer**

The images are transmitted without encryption.

**Query Report**

Requests a report on the currently selected study from the configured report network node. If a report on the selected study already exists on the Visage 7 server, the report is downloaded again and the existing report is overwritten.

**Use Local Cache**

If this icon is activated, the images you download from the web server are stored in your local cache memory.

When you load images into a viewer, Visage 7 Web Client searches the local cache first and only retrieves data from the web server if no images are found in the local cache.

This option speeds up your workflow if you need to load and review one study several times during one Visage 7 Web Client session. It is recommended for networks with low data transfer rates.

**Preload Study**

Loads all images of a selected study into the local cache for the duration of your session. When you subsequently load these images into a viewer and move on to this viewer the images are displayed immediately.

This option is only active if **Use Local Cache** has also been selected.

**Truncate Thumbnails for Large Series**

Toggles thumbnail display for large series: one or all thumbnails per series are shown in the image preview section.

**Show Thin Slice Series**

When this option is selected the series list will list both thin slice series (original scan series) and thick slice series (generated image series which permit faster loading and browsing).

When this option is deselected only thick slice series are shown in the series list.

**Select all previews**






Selects all images in the preview window.

**Deselect all previews**

Deselects all images currently selected in the preview window.

**DICOM Information**

Shows the DICOM information of the selected image.

	<b>Launching Application</b> Starts another web application if your system administrator has configured this for you. The icon is only active if you have selected a study.
	<b>DICOM Send</b> Opens a dialog box. Select the address(es) in your DICOM network to which you want to send the selected series or image(s).
	<b>DICOM Quick Send</b> Sends the selected series or image(s) to one or several DICOM nodes immediately. (Your system administrator has defined these addresses for you.)
	<b>Display as 3D volume</b> Shows the selected data in the Visage 7 Client for advanced 3D evaluation.
	<b>Automatic Synchronization with 3D volume</b> Select this option to ensure that both the Visage 7 Web Client and the Visage 7 Client will always show images of the same patient.

## Information about the study

The colored header bar of the study shows the following information:

*study description date/time referring physician study ID*

### Tip

Click on the study information bar to select all images of this study or to invert the current selection of images. Double-clicking on the study information will load the entire study into viewer 1.

## Information about a series

In the image preview thumbnails are grouped by series. Series header bars show the following information about a series:

*series description modality number of images examined organ date/time additional series information*

**Tip**

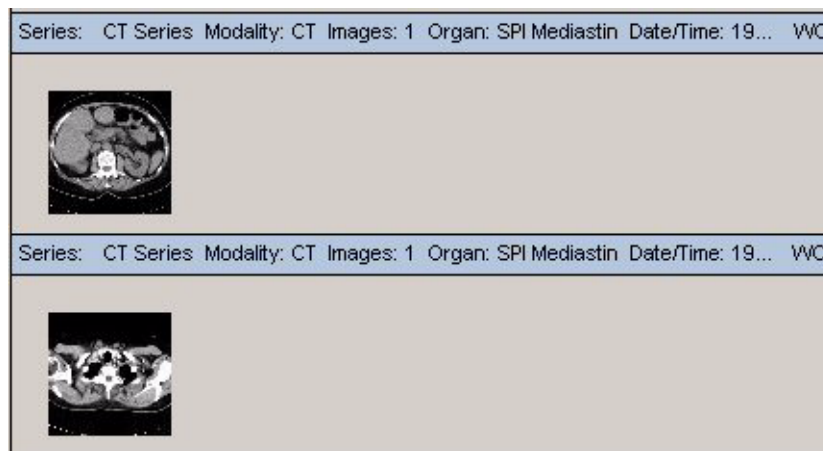
Click on the series information bar to select all images of this series or to invert the current selection of images. Double-clicking on the series information will load the entire series into viewer 1.

**Additional series information**

- CT: Series scanned with contrast medium

For CT series the abbreviation WC on the right edge of the series information bar indicates that these images were scanned with contrast medium. WO indicates that this series was scanned without contrast medium.

If a CT series contains both images that were scanned with and without contrast medium then Visage 7 Web Client splits up this series. The images are displayed grouped as two separate series.

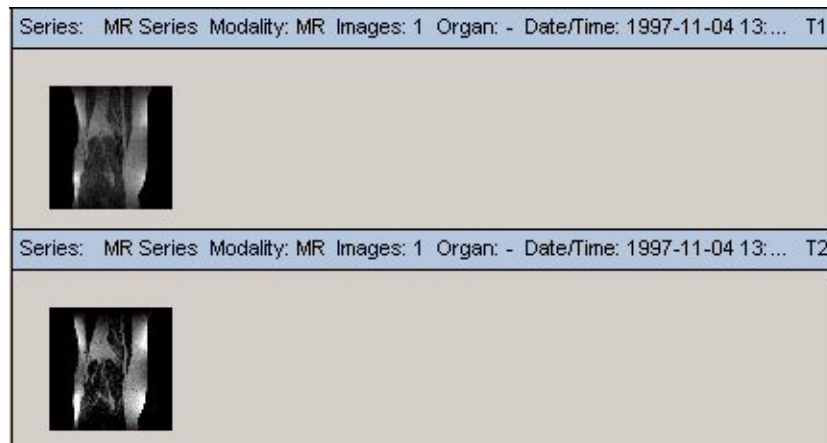


- MR: T1/T2 series

For MR series, Visage 7 Web Client indicates if the series contains T1 or T2-weighted images.

If an MR series contains both T1 and T2-weighted images then Visage 7 Web Client splits it up. The images are displayed grouped according to their T1/T2-weighting.





## Thumbnails

The way the thumbnails themselves are presented also provides information about image types and acquisition data.

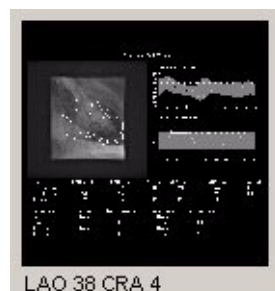
### Multiframe images

Series of some modalities can contain single images or multiframe images. You will recognize multiframe images by the dog-ear shown in the top right corner of the thumbnail.



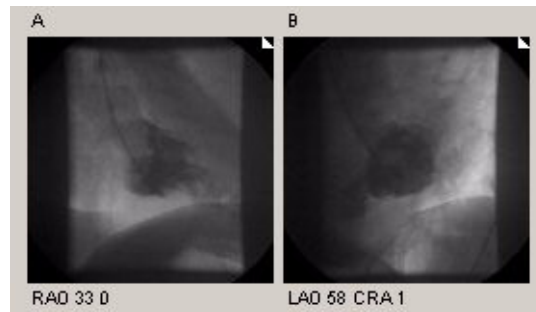
### XA report or photofile images

XA series may contain report or photofile images with image evaluation information. Report/photofile images are displayed next to the corresponding multiframe images as separate series.



**Biplane scenes**

XA scenes that have been recorded in biplane mode contain image pairs. You can recognize biplane scenes in the image preview by the fact that two multiframe images are close together.

**Truncated series**

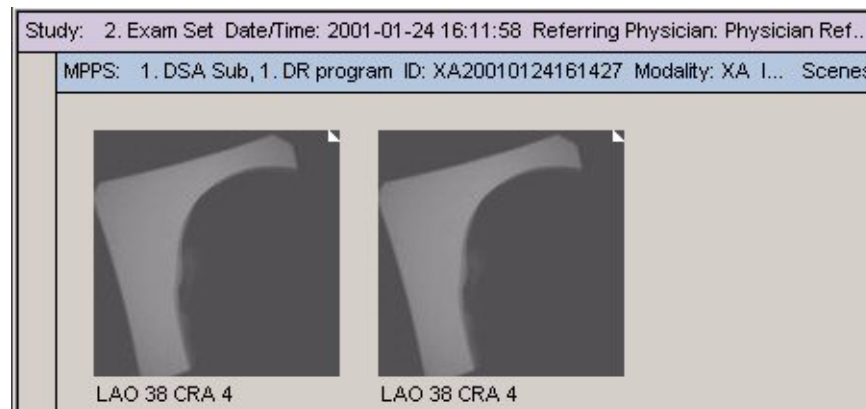
For very large series so-called truncated thumbnail display mode can be enabled in the image preview (see *Truncate Thumbnails for Large Series* icon in the toolbar). One image from the middle of the series followed by three dots is shown in the image preview for such long series.

**MPPS (Modality Performed Procedure Steps)**

Support of MPPS (Modality Performed Procedure Steps) can either be activated or deactivated by your system administrator.

If MPPS support is deactivated, the display of the series is staggered according to the SeriesInstanceID, and using possible value pairs (e.g. image type).

If MPPS support is activated, however, the MPPS-ID is used to group series, together with further value pairs. If no MPPS-ID is available, then the display is staggered only according to these value pairs (e.g. image type). The original image sequence within an MPPS series is retained.



## Image preview popup menu

A popup menu is available in the image preview section to help you select images and show image information.

<b>Select</b>	Selects the thumbnail the cursor is currently pointing to.
<b>Deselect</b>	Deselects the thumbnail the cursor is currently pointing to.
<b>Select all</b>	Selects all images of a study or series if the cursor points to the study or series title bar, or if the cursor points to anywhere between thumbnails.
<b>Deselect all</b>	Deselects all images of a study or series (depending where the cursor is currently pointing).
<b>Invert Selection</b>	Inverts the selection (i.e. selects the currently unselected images) of a study or series (depending where the cursor is currently pointing).
<b>Image Info</b>	Shows information about the image type and compression level settings for an image.

## Report window

Visage 7 Web Client can display both images and reports.

Visage 7 Web Client provides a text-only view and a view in which images and report text are displayed side by side, and in which you can also edit a report.

### Tip

Your system administrator can define that the report with image view is the preferred viewer. This means that it will automatically pop up when you double-click a study or series in the study/series or preview window for which a report exists on the Visage 7 system.

If no report is available locally and a report interface has been configured with automatic report query, Visage 7 Web Client will automatically search the HIS/RIS for the report every time you load images.



Use these icons on the navigation bar to switch to the report window or report with image view.

The icons are active if you have selected a study for which a report is available in the study/series window.

### Tip

You must first load images into viewer 1 or viewer 2 before switching over to the report with image view. Otherwise the image section of this view will remain blank and only the report text will be shown.

-Or-



Click the **Edit Report** icon in the toolbar of one of the viewer windows to create a new report.

Visage 7 Web Client now shows the report with image window whose report section is in editing mode.

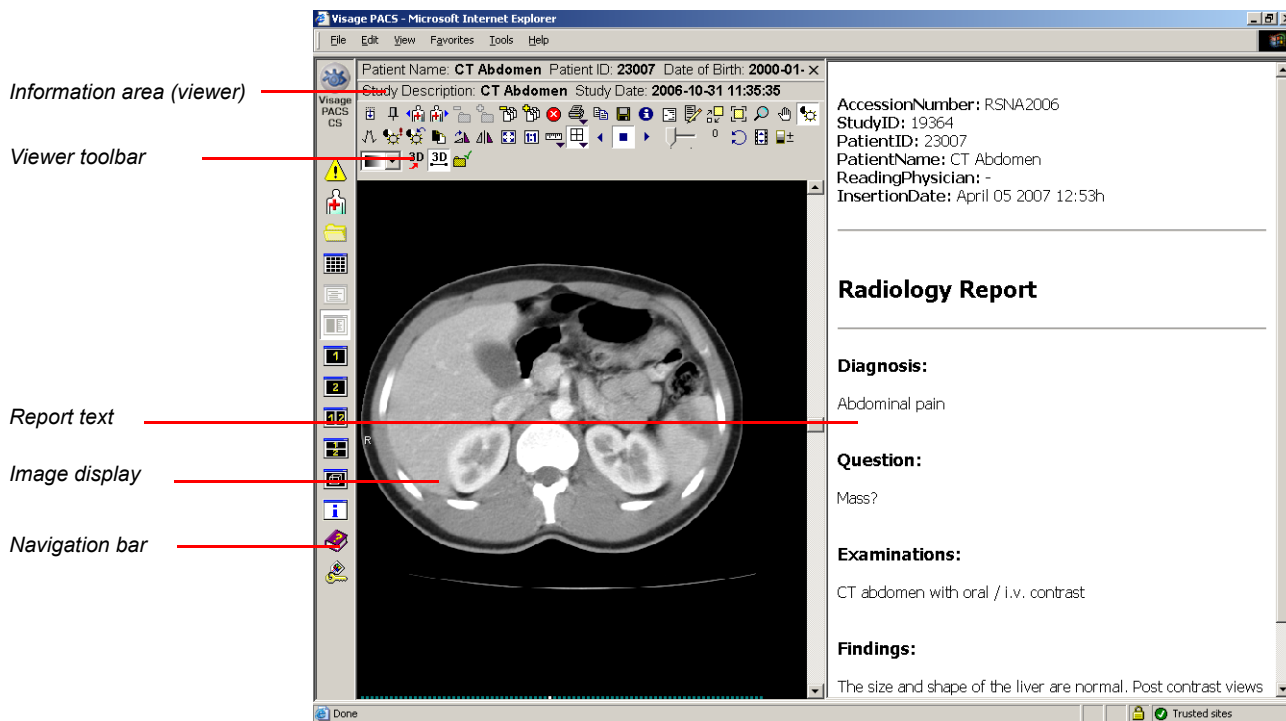
### Tip

If your hospital works with a HIS/RIS and normally uses this system to create and manage reports the **Edit Report** icon will most likely not be available in your client installation. Instead the system will automatically query the report node for the latest report version and display it view-only every time you load images.

Consult your system administrator for details about how your system has been configured with respect to report handling.

**Dual monitor**

Dual monitor operation does not support the text-only view. When you call the report with image view in dual monitor mode, the left monitor shows the image window, the right monitor shows the report.

**Report text**

When you call one of the report windows with the navigation bar icons the report text is shown view only.

From the report with image window you can move on to the Visage 7 Web Client report editor. In the text only report window you can only view but not edit a report.

**Note**

Note that when you edit and save a report in the Visage 7 Web Client report editor this will only change the report stored on Visage 7 but not update the report version stored in the HIS/RIS for this study.

**Caution**

Visage 7 can receive and display DICOM Structured Reports. The layout in which these structured reports are shown in Visage 7 Web Client can be configured by Customer Service.

However, if Customer Service makes any layout changes at your request, you must validate these changes to ensure that all relevant report information is actually shown in the HTML report translation of these reports.

***Report text display*****Header information**

The header of the loaded report shows data about the patient and examination (for example, accession number, study ID, patient name, and patient ID). This data represents the information stored for this study and patient in the HIS/RIS.

Compare this data with the patient information in the viewer section (if you are working in the report with image window) or with the patient's information in the study/series window to ensure the information in the HTML report is up to date.

**Report text**

If the report is too long for the report window, use the scroll bar to scroll through the report text.

**Footnotes**

When a report was received from the HIS/RIS in the format DICOM Structured Report it may contain footnote information, which is not immediately visible in the HTML report version shown in the report window.



Move the mouse pointer over these icons which indicate hidden footnote text to show this information in a tooltip.

***Report editor***

You activate the report editor with this icon in the toolbar of the image display section.

Once you have switched over from view only to editing mode a toolbar appears above the report text with basic text editing and text formatting functions.

**Note**

You can only edit the report text (white background) but not the report header (gray background).

**Report editor toolbar****Save**

Saves your changes to the report back to the web server.

**Cancel**

Undoes your editing and displays the report as you last saved it or as it was stored on the web server before you started editing it.

**Font family and size**

Allows you to change the font family and size for selected report text.

**Cut, Copy, Paste**

These icons allow you to cut, copy, and paste text in your report.

**Icons for editing characters**

With the icons **Bold**, **Italic**, **Underline**, **Strikethrough**, **Superscript**, and **Subscript** you can change the format properties of selected characters.

**Icons for paragraph editing**

With the icons **Align left**, **Center**, **Right** you can change the alignment of the paragraph in which the text cursor rests at the moment.

With **Numbering** you can create numbered lists, with **Bullets** you can create lists with bullets. Use **Increase Indent** and **Decrease Indent** to indent paragraphs or to remove indentation.

**Image display**

The image section in the report view contains all those images from the current study that you have loaded into a viewer.

The image display in the report window provides you with the same image display and editing functions as any of the viewer windows.

**Viewer toolbar**

Use the icons on the toolbar above the image display to change the display of the loaded image, to evaluate image information, and to print images.

See also *Toolbar (viewer)*

**Position indicator bar**

The position indicator bar below the image display shows you which image of a loaded series is currently visible.

See also *Position indicator bar (viewer)*

## Viewers



The viewer windows integrate all functions required for reviewing images.

In the viewer windows you can scroll through the loaded images, select a screen layout best suited to your problem, optimize image display of individual or all loaded images for the duration of the current Visage 7 Web Client session, and evaluate image information.

### Viewers 1 and 2

Visage 7 Web Client offers you two viewer windows. The layout of the windows and the function of the toolbar icons are identical in both viewers.

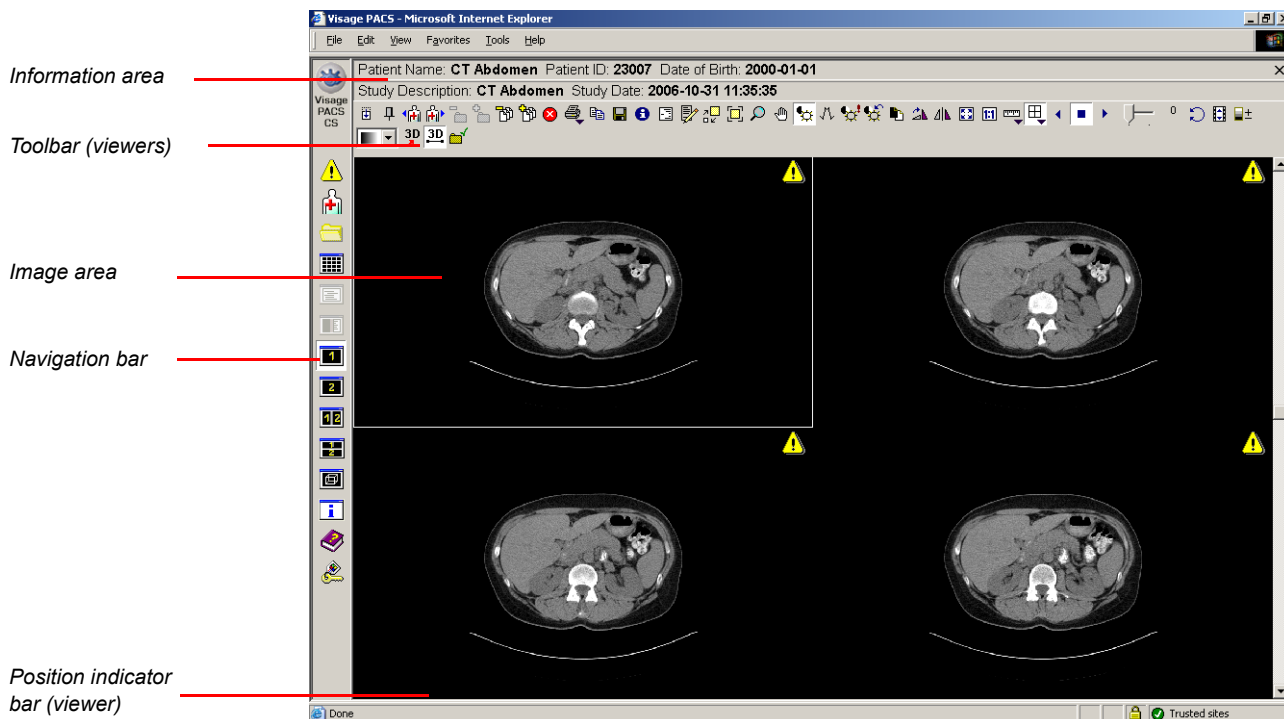
### Modality-specific options

Depending on the modality of the loaded images, the toolbar of the viewer may contain a number of extra icons.

- Standard mode: all modalities except for XA
- Angio mode: XA

### Dual monitor

In dual monitor operation, the viewer is spread across both monitors. It contains an additional scroll bar on the left monitor for navigating through the loaded images. This is synchronized with the right scroll bar.





## Information area (viewer)

This area of the viewer provides information about the loaded patient and study.

<b>Patient Name</b>	Name of the loaded patient.
<b>Patient ID</b>	ID of the loaded patient.
<b>Date of Birth</b>	Date of birth of the loaded patient
<b>Study description</b>	Description of the study
<b>Study Date/Time</b>	Date and time of the study in the format: YYYY-MM-DD and hh:mm:ss (24-hour clock).






## Toolbar (viewer)

With the icons of the viewer toolbar and the popup menu in the image display area you scroll through the loaded images, change the screen layout, and optimize the image display.















The viewer toolbar is shown as one, two, or three rows of icons, depending on your screen resolution and the number of configured icons.

### Note

The selection of available icons depends on what images are loaded (XA images or others), and on how the system administrator has configured the user interface for you.

	<b>Change Toolbar Location</b> Moves the toolbar from above to left of the image area (i.e. horizontal to vertical) and vice versa.
	<b>Auto-Hide Toolbar/Lock Toolbar</b> Hides or redisplay the viewer toolbar. If the toolbar is hidden move the cursor over the area where it would normally be shown to redisplay it temporarily and to access its icons.
	<b>Previous Patient</b> Shows the first study and series of the patient above the patient currently selected in the patient list.
	<b>Next Patient</b> Shows the first study and series of the patient below the patient currently selected in the patient list.
	<b>Previous Study</b> Loads the previous study of the current patient and displays its images.

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	<p><b>Next Study</b></p> <p>Loads the next study of the current patient and displays its images.</p>
	<p><b>Previous Series</b></p> <p>Loads the previous series of the current study and displays its images. With multiframe images, the previous scene is loaded.</p>
	<p><b>Next Series</b></p> <p>Loads the next series of the current study and displays its images. With multiframe images, the next scene is loaded.</p>
	<p><b>Previous Presentation State</b></p> <p>Shows the previous presentation state of this patient and study.</p>
	<p><b>Next Presentation State</b></p> <p>Shows the next presentation state of this patient and study.</p> <p>The <b>Previous/Next Presentation State</b> icons are dimmed if only one presentation state exists for this study or if no presentation state has been loaded.</p>
	<p><b>Cancel loading</b></p> <p>Stops loading images.</p>
	<p><b>Select Images</b></p> <p>Offers options for selecting images for printout on a DICOM printer.</p>
	<p><b>Select all Images</b></p> <p>Selects all loaded images for DICOM print.</p>
	<p><b>Range Selection</b></p> <p>Opens a dialog box for range selection.</p>
	<p><b>Deselect all Images</b></p> <p>Undoes the current selection for DICOM print (no images are selected after you click this icon).</p>
	<p><b>Print</b></p> <p>Allows you to print images on a connected DICOM or Windows printer.</p>
	<p><b>Windows Print</b></p> <p>Opens the <b>Windows Print</b> dialog box and prompts you to select a printer and print settings. All images currently displayed on the screen will be printed.</p>
	<p><b>DICOM Print</b></p> <p>Opens the <b>DICOM Print</b> dialog box and prompts you to select a printer and print settings. Only those images that are marked for DICOM print (solid green box in the lower right-hand corner of the image segment) will be printed.</p>
	<p><b>Copy to Clipboard</b></p> <p>Copies the currently displayed images to the clipboard. From there, you can paste the copied images into another Windows program (e.g. a presentation or NetMeeting program).</p>

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**DICOM Send**

Opens a dialog box. Select the address(es) in your DICOM network to which you want to send the selected image or all loaded images.

**DICOM Quick Send**

Sends the selected image or all loaded images to one or several DICOM nodes immediately. (Your system administrator has defined these addresses for you.)

**Export Images**

Exports the currently displayed images to a directory on your local PC. You can save the images as DICOM images or in BMP or JPEG format.

**Caution**

When images were saved in BMP or JPEG format they may no longer be suitable for diagnosis.

**DICOM Information**

Shows the DICOM information of the current image.

**Hide/Show Image Text**

Shows or hides text in the image.

**Edit Report**

Opens an existing report for editing or creates a new study report on the web server.

**Zoom**

Allows you to enlarge or reduce the displayed images steplessly using the left mouse button.

While **Zoom** is active, the mouse pointer looks like this:

**Quick Zoom**

Permits temporary zooming of a portion of an image. As soon as you release the mouse button, the image returns to its original size.

While **Quick Zoom** is active, the mouse pointer looks like this:

**Magnifying Glass**

Allows you to enlarge a portion of an image by factor 2. As soon as you release the mouse button, the enlargement is no longer displayed.

While **Magnifying Glass** is active, the mouse pointer looks like this:



**Pan**

Allows you to move the image in the segment. If the portions of the image disappear off the screen after enlargement, you can pan them back into view.

While **Pan** is active, the mouse pointer looks like this:

**Windowing**

If this icon is pressed, you can use the mouse to change the grayscale display (brightness/contrast) in the images.

While **Windowing** is active, the mouse pointer looks like this:

**Edge Enhancement**

This filtering enhances the contrast in images.

While **Edge Enhancement** is active, the mouse pointer looks like this:

**Predefined Level Presets**

If different window or filter values are predefined for the current image type, you can call them up here and apply them to the loaded images.

**Reset Window Level**

Resets the window and filter values back to default values (i.e. the values with which the images were loaded).

**Invert**

Inverts the grayscale display of an image. Bright areas are now shown dark and dark areas are shown light.

**Rotate**

Rotates the current image 90° clockwise.

**Mirror**

Mirrors the current image about its vertical axis.

**Fit into Segment**

Resizes the current image to fit it optimally in the image segment.

**Original size**

Resets the loaded image to its original size.

**Previous Annotated Image**

Scrolls up in the stack of loaded images and shows the next image containing annotation graphics or annotation text.

**Next Annotated Image**

Scrolls down in the stack of loaded images and shows the next image containing annotation graphics or annotation text.

**Measurement Functions**

Opens a selection list with measurement functions.

**Distance Measurement**

Permits measurement of distances in images.

While this tool is active, the mouse pointer looks like this:



Measured values are indicated in exact millimeters (mm; in CT and MR images), estimated millimeters (mm[?]), or in pixels (pix) if no distance measurement in millimeters is possible.

**Caution**

The accuracy of distance measurements is  $\pm 2$  pixels. Larger errors can occur if the image is displayed with reduced matrix size, that is if not every original pixel is shown on the screen due to zoom-out. For optimum accuracy we recommend zooming into the structure of interest as much as possible. The accuracy is further limited by the physical resolution of the acquisition itself. If the monitor used for display does not permit exact pixel selection, the inaccuracy can be greater still.

**Angle Measurement**

Permits measurement of angles in images.

While this tool is active, the mouse pointer looks like this:

**Caution**

The accuracy of angle measurements depends on the length of the shorter of the two angle legs. The longer the angle legs are, the better the accuracy.

For example:

Length of shorter angle leg (measurement error):

10 pixels ( $\pm 12^\circ$ ), 20 pixels ( $\pm 6^\circ$ ), 50 pixels ( $\pm 2.5^\circ$ ), 100 pixels ( $\pm 1.1^\circ$ )

Larger errors can occur if the image is displayed with reduced matrix size, that is if not every original pixel is shown on the screen due to zoom-out. For optimum accuracy we recommend zooming into the structure of interest as much as possible. The accuracy is further limited by the physical resolution of the acquisition itself. If the monitor used for display does not permit exact pixel selection, the inaccuracy can be greater still.

**Calibrate Distance**

Permits calibration of distances in images.

While this tool is active, the mouse pointer looks like this:

**Density Measurement**

Permits measurement of grayscale values (pixel values) in images.

While this tool is active, the mouse pointer looks like this:

**ROI Ellipse**

Permits evaluation of circular or elliptical regions of interest (ROIs) in grayscale images.

While this tool is active, the mouse pointer looks like this:

**ROI Rectangle**

Permits evaluation of rectangular regions of interest (ROIs) in grayscale images.

While this tool is active, the mouse pointer looks like this:



Measured values are indicated in exact square millimeters (mm<sup>2</sup>; in CT and MR images), estimated square millimeters (mm[?]<sup>2</sup>), or in pixels (pix) if ROI measurement in millimeters is possible.

### Caution

The relative error of the elliptical or rectangular ROI measurements is  $\pm 2$  pixels/ (shorter radius or shorter side).

For example:

Shorter radius or shorter side (measurement error):

10 pixels ( $\pm 20\%$ ), 20 pixels ( $\pm 10\%$ ), 50 pixels ( $\pm 4\%$ ), 100 pixels ( $\pm 2\%$ )

Larger errors can occur if the image is displayed with reduced matrix size, that is if not every original pixel is shown on the screen due to zoom-out. For optimum accuracy we recommend zooming into the structure of interest as much as possible. The accuracy is further limited by the physical resolution of the acquisition itself. If the monitor used for display does not permit exact pixel selection, the inaccuracy can be greater still.

**Density Profile**

Permits evaluation of a density profile along a straight line (an arrow indicates the direction).  
While this tool is active, the mouse pointer looks like this:

**Show Scoutlines (compare mode only)**

Shows the position of selected images on the corresponding reference images.

Note that this icon is only shown in the viewer toolbars in compare mode. It will only become active if a CT or MR study has been loaded that contains suitable image data.

**Show All Scoutlines**

Shows all scoutlines in the reference image.

**Show Border Scoutlines**

Shows only the first and last scoutline in the reference image.

**Show Border and Current Scoutlines**

Shows the scoutline of the current image and the first and last scoutline in the reference image.

**Show Current Scoutline**

Shows only the current scoutline in the reference image.

**Display Mode**

Opens a selection list with different layouts.



Select, for example, the **2x2** view. The image display is divided into 4 segments in this example. Depending on the number of images that are loaded, up to 4 images will be displayed at one time.

**Cine Mode Backward**

Plays back the loaded images like a movie. The playback direction is backward.

**Cine Mode Stop**

Stops movie playback.

**Cine Mode Forward**

Plays back the loaded images like a movie. The playback direction is forward.

**Cine Mode Speed**

If the slider is far left, movie playback stops. If the slider is far right, the movie is played back at maximum speed.

**Bouncing Cine**

If you click this icon, the movie will run without interruption: When playback reaches the last image, the movie runs backward to the first image, then forward again, etc.



### Interactive Cine Mode

When **Interactive Cine Mode** is active, the images of a series (or scene) will play back when you move the mouse pointer over the image area. This gives the impression of a movie being played back.

Mouse up or right: play forward  
 Mouse down or left: play backward  
 Mouse stopped: still image

The direction in which you are supposed to move the mouse can be configured by your system administrator.



### Gamma Adjustment

Opens a dialog box for the adjustment of the gamma curve of images. This adjustment applies to all Visage 7 Web Client image viewers.



### Show/Hide Presentation State

Toggles image display: from presentation state image to original referenced image and vice versa. The icon is only active if you have loaded a presentation state.



### Display as 3D volume

Shows a loaded series in the Visage 7 Client for advanced 3D evaluation.

The icon is only active when you are reviewing a series for which a 3D volume data set is available on the server.



### Automatic Synchronization with 3D volume

Select this option to ensure that both the Visage 7 Web Client and the Visage 7 Client will always show images of the same patient.



### Mark study as read

Sets the status of the procedure step for this study to completed.

This icon is only active if a procedure step of status scheduled exists for the study whose images are currently shown in the viewer.



### Color Map

Allows you to display the loaded images with another color map that highlights your current diagnostic problem in a better way.

## Angio mode

In angio mode (with XA images loaded), the toolbar contains a number of additional icons. They provide special display functions for evaluating XA scenes.



### Plane A






Switches to plane A for biplane angio scenes.



### Plane B

Switches to plane B for biplane angio scenes.







	<p><b>Loop All</b></p> <p>Successively plays back all loaded scenes of a study.</p> <p>If you click the <b>Previous Series</b> or <b>Next Series</b> icon during playback, the movie will jump back to the last scene or on to the next scene.</p>
	<p><b>Previous Frame</b></p> <p>Scrolls to the previous frame (individual image) of the multiframe.</p>
	<p><b>Next Frame</b></p> <p>Scrolls to the next frame (individual image) of the multiframe.</p>
	<p><b>Display Reports</b></p> <p>Displays the report images originating from the XA environment which are assigned to a scene.</p>
	<p><b>Display Scenes</b></p> <p>Switches back from displaying the report images to displaying the multiframe (scene).</p>

## Image area

The image area shows the loaded images with the selected size and in the selected layout. The size of this area depends on the screen resolution and the actual size of the application window.

## Icons

Once you have loaded images or started manipulating images icons may appear in the upper right-hand corner of the image segments. These icons alert you to information you should consider when interpreting the images.

	<p>Lossy compressed image: The quality of the image may have been affected (artifacts). The quality percentage is indicated next to the icon.</p> <p>This warning triangle remains visible even if the image texts are hidden.</p>
	<p>When loading images into one of its viewers, Visage 7 Web Client checks the DICOM header information in every single image.</p> <p>If this DICOM header information does not agree with the patient and study data stored in the Visage 7 database for one or several images, this icon is displayed in the upper right-hand corner of the affected images.</p>
	<p>If you have manipulated a presentation state image this icon appears in the upper right-hand corner. It warns you that the current image no longer corresponds to the image saved in the presentation state at the diagnostic workstation.</p>
	<p>This icon in the upper right-hand corner of the image segment indicates that calibration has been applied to distance lines in this image.</p>



This icon indicates that the displayed images do not originate from an original scan series (thin slice series) but were generated by a Visage 7 thick slice compilation rule.

### Popup menu

For your convenience the image area of the Visage 7 Web Client viewers offers a popup menu for quick and easy access to frequent image processing functions.



Right-click in the image display area.

#### Note

Note that many image display functions are available from both the toolbar and popup menu. Others functions are available only from the toolbar or only from the popup menu. The following table describes only those functions that have not already been explained in the context of the toolbar.

<b>Apply to All</b>	Applies the last editing step to all images of a loaded series.
<b>Auto Apply to All</b>	When this option is selected, all image editing steps are applied to all images of a loaded series immediately (and not just to one image alone).
<b>Undo</b>	Undoes the last editing step.
<b>Show/Hide Overlays</b>	Shows overlays if any have been created for the loaded images.
<b>Hide/Show Shutter</b>	Shows or hides a shutter, if a shutter was created for the loaded image.
<b>Delete Measurement/Annotation</b>	Deletes a selected measurement or annotation graphic.
<b>Delete all Measurements</b>	Deletes all measurement graphics in the currently selected image.
<b>Delete all Annotations</b>	Deletes all annotation graphics in the currently selected image.
<b>Delete all Measurements and Annotations</b>	Deletes all measurement or annotation graphics in the currently selected image.
<b>Select Image</b>	Selects the current image (i.e. the image highlighted by a white border) for DICOM print. DICOM print selection is indicated by a solid green box in the lower right-hand corner of the image segment.
<b>Remove Image Selection</b>	Removes the current image from the DICOM print selection.
<b>Hide/Show ECG</b>	Shows (or hides) the ECG curve in the image (only possible for XA images containing ECG information).

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<b>SMPTE 1/2</b>	Calls one of two available test images for performing a display quality check of your monitor.
<b>Show/Hide Measurements and Annotations</b>	Shows or hides measurement and annotation graphics stored in an image.

---

**Tip**

In this client type you can only create measurements and you can delete measurements or annotation graphics only temporarily and for the duration of the current session. You cannot save these changes back to the web server. Saving measurements and annotations back to the web server is possible in client type Expert Reading only.

---

**Tip**

The SMPTE images you can display here are not suitable for calibration of DICOM printouts. Use *TestImage\_SMPTE\_1k* instead. You find this test case in the patient list. If no patient of this name exists in your patient list, ask your system administrator to insert this test case into the Visage 7 system from your installation medium. We recommend that you protect the *TestImage\_SMPTE\_1k* test case against deletion, so that it will not be deleted automatically when disc space is running low.

---

## Position indicator bar (viewer)

You will usually have more images loaded than can be displayed simultaneously in the selected layout. The position indicator bar at the bottom edge of the screen tells you which images are visible and which are still in the background.

<b>Light green bar</b>	These images are visible on the screen.
<b>White bar</b>	This image is selected.
<b>Dark green bar</b>	Loaded images are not visible.
<b>Dark gray bar</b>	Image not yet loaded (only appears during loading).

## Compare mode

Compare mode shows the two viewers side by side or one above the other. You can easily compare two series in this way.



Use these icons on the navigation bar to switch to compare mode (vertical), i.e. side by side, or compare mode (horizontal), i.e. top and bottom.

### Image display and editing

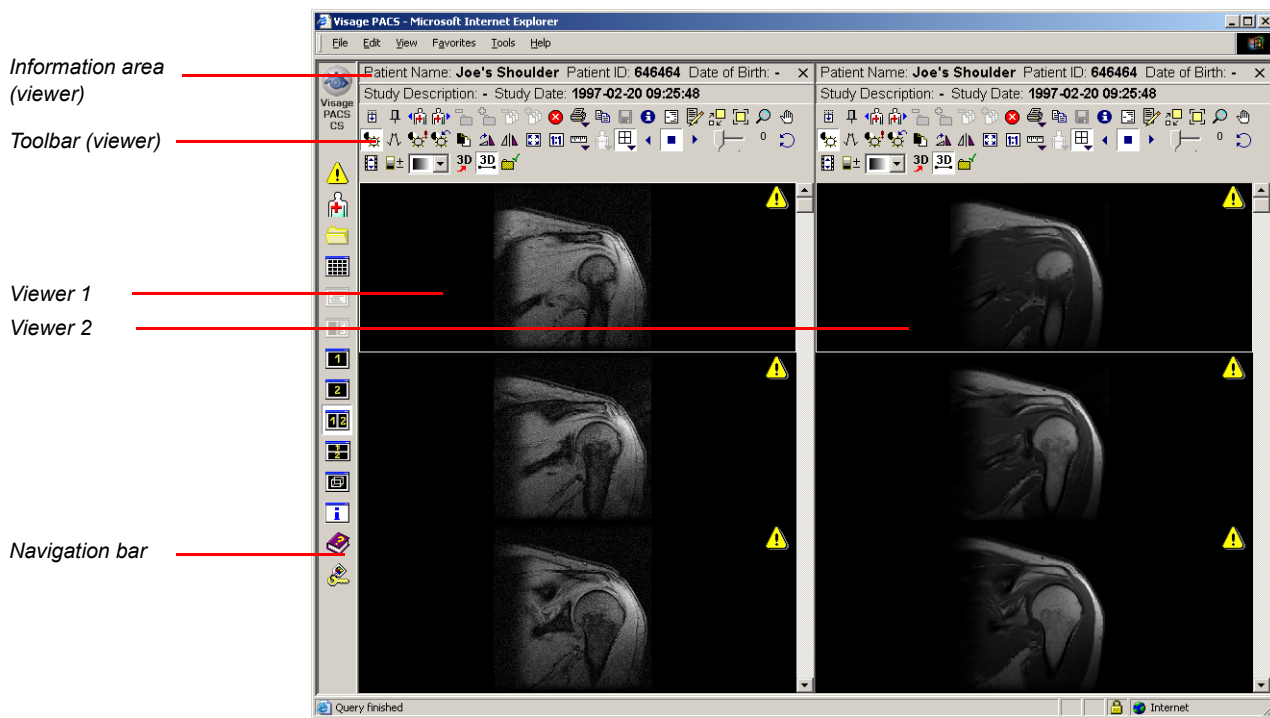
As far as image display and processing is concerned, you can work in both screen halves in just the same way as if a viewer were displayed full screen.

#### Tip

The toolbars above (or to the left) of each image view contain the same icons and access the same functions as in one of the full screen viewer windows, with one exception: Showing scoutlines in suitable CT or MR images is only possible in compare mode but not in any of the full screen image viewers or the report with image view. If configured, scoutlines are shown by default when you load suitable series into compare mode.

### Dual monitor

In dual monitor mode, the two viewers are displayed on the two monitors: viewer 1 on the left and viewer 2 on the right monitor.



## Basic MIP/MPR viewer



The basic MIP/MPR Viewer can calculate a volume data set from suitable CT and MR series.

You can move freely through this volume data set, viewing new slice images in any plane or orientation.

### Note

The basic MIP/MPR viewer is a display mode only. It allows you to calculate and display new slice images. However, it does not provide measurement tools and you cannot save the recalculated images back to the web server. If you require advanced 3D evaluation functions contact your Sales Representative concerning the Visage 7 Client option.

### Calculation method

The Visage 7 Web Client basic MIP/MPR viewer gives you a choice of two 3D calculation methods:

- *Multiplanar reconstruction (MPR)*  
This method is the default method used by the program.
- *Maximum intensity projection (MIP)*  
You can switch each of the four views separately to an MIP-based display.

### 3D operation

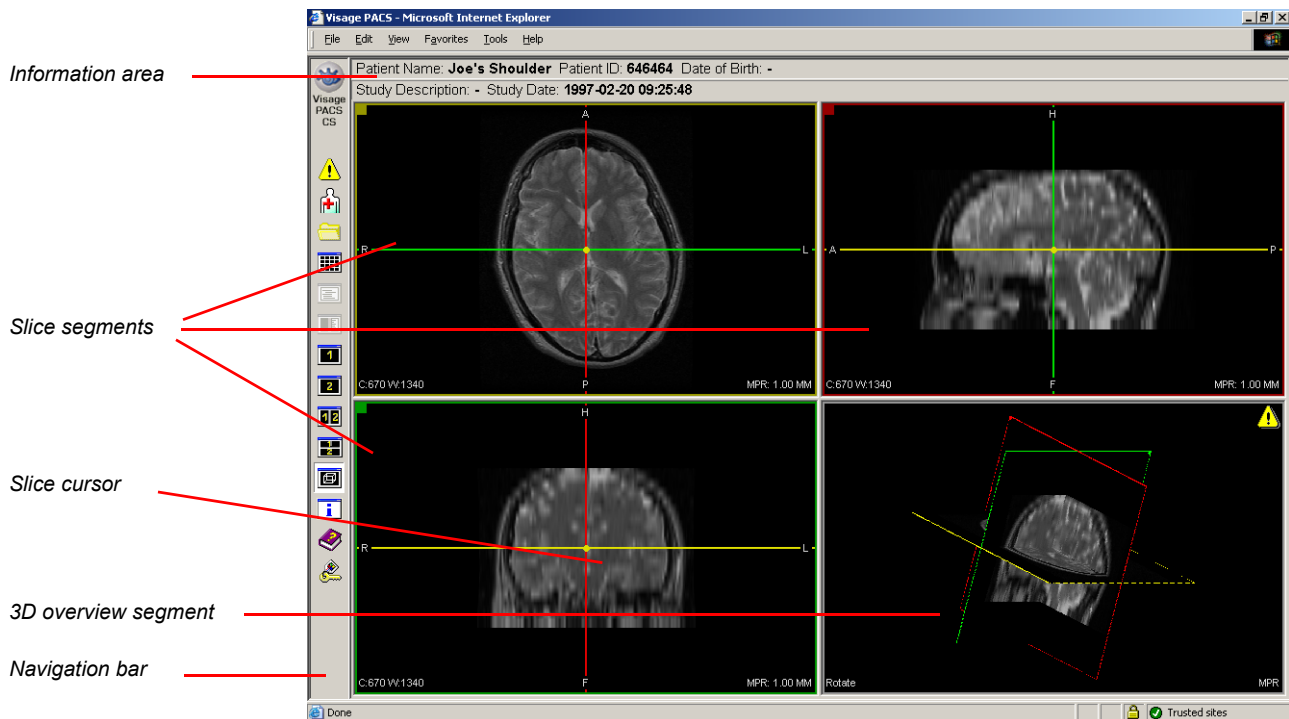
Unlike other Visage 7 Web Client windows, the basic MIP/MPR viewer does not provide a toolbar for calling operating functions.

In the basic MIP/MPR viewer, you work with:

- *Popup menu*
- *Keyboard*
- *Mouse clicks*

### Dual monitor

If you are working in dual monitor mode, the basic MIP/MPR viewer is only shown on the left monitor.



## Information area (basic MIP/MPR viewer)

This area of the basic MIP/MPR viewer provides information about the loaded patient and study.

<b>Patient Name</b>	Name of the loaded patient.
<b>Patient ID</b>	ID of the loaded patient.
<b>Date of Birth</b>	Date of birth of the loaded patient
<b>Study description</b>	Description of the study
<b>Study Date/Time</b>	Date and time of the study in the format: YYYY-MM-DD and hh:mm:ss (24-hour clock).

## 3D overview segment

When suitable data is loaded into the basic MIP/MPR viewer, a volume data set is calculated from the acquired slice images. The volume is shown as an orientation cube in the overview segment.

### Color coding after loading

Immediately after you have loaded a 3D data set, the anatomical standard views are shown in the slice segments. The orientations of these slices are shown as follows on the orientation cube:

- Surface with **yellow** border - **transverse** standard view
- Surface with **red** border - **sagittal** standard view
- Surface with **green** border - **coronal** standard view

### Color coding after moving

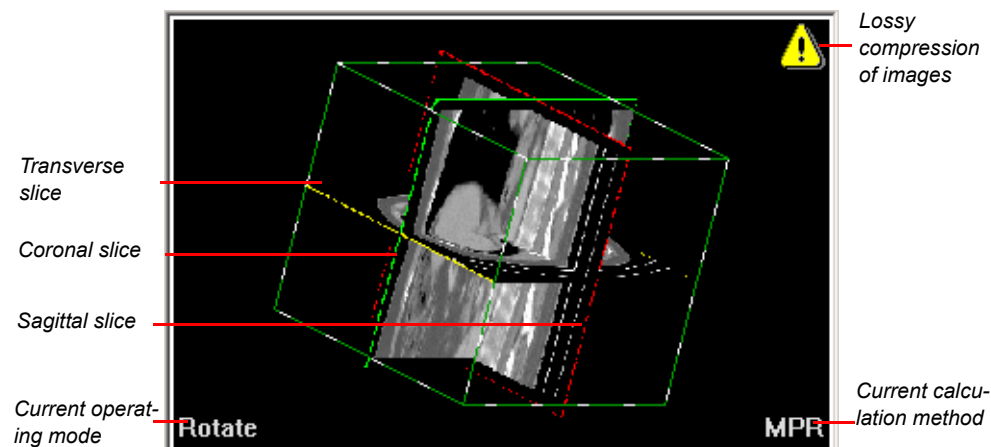
Using the *Slice cursor*, you can change the orientation and position of slices in the slice segments. The slices always remain mutually orthogonal. This calculates and displays new slice images. The slices then no longer correspond to the anatomical standard views. The following now applies:

- Surface with **yellow** border - **upper left** segment
- Surface with **red** border - **upper right** segment
- Surface with **green** border - **lower left** segment

### Image processing

To obtain a better view of the orientation and position of the display slices, you can rotate the orientation cube in each direction and change display parameters, such as window values. This is done with the mouse.

### Information in the overview segment



## Slice segments

After you have loaded the data set, the slice segments first show the anatomical standard views:

- Transverse standard view (upper left, yellow border)
- Sagittal standard view (upper right, red border)
- Coronal standard view (lower left, green border)

### Slice cursor

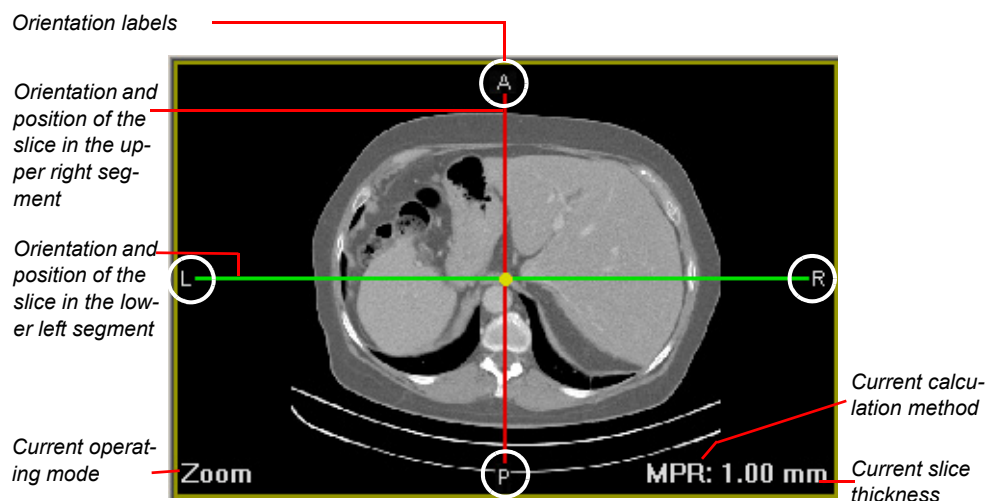
You can ascertain the position and orientation of the two other slices by the color of the *Slice cursor* and from the orientation labels.

You can use the slice cursor to move through the volume data set. You can observe the changes in orientation and position of the slices displayed in the *3D overview segment*.

### Image processing

To obtain a better view of details in the displayed slices, you can change different display parameters in the slice segments (e.g. window, zoom, pan).

### Information in the slice segments



Example: Upper left segment (after loading images: transverse slice)

## Slice cursor

The slice cursor in a slice segment shows you the orientation and position of the slices that are currently shown in the two other slice segments.

### Color coding

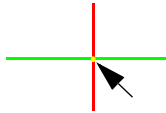
On the slice cursor:

- a **yellow** cursor line corresponds to the slice image in the upper left segment.
- a **red** cursor line corresponds to the slice image in the upper right segment.
- a **green** cursor line corresponds to the slice image in the lower left segment.

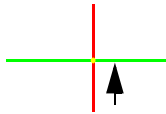


## Slices in the volume data set

You can use the slice cursor of the three slice segments to move through the volume data set and display the recalculated slice images.

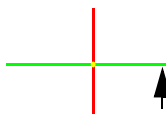


If you move the center of the slice cursor, you will move the entire slice cursor in the image. This moves two view planes simultaneously in the volume data set and shows new slice images in both of the other slice segments.



If you click near to the point of intersection on the cursor line, you will only move a single cursor line.

That will take you through the volume data set along the two other standard axes and update the view in one of the other slice segments.



If you click a long way from the point of intersection on the cursor line, you can rotate the slice cursor.

This rotates the cross-hair, updates the views in the two other slice segments, and generates slice images with non-standard views in them.

### Tip

You can monitor all your slice cursor movements in the 3D overview segment. This gives you a clear overview of the slices through the volume data set that are currently being displayed in the slice segments.

## Popup menu



Right-click on a slice segment or on the 3D overview segment.

A popup menu appears with all the processing options that are possible here.

<b>Apply to All</b>	Applies a processing function in the current segment to all other segments, too. (In the overview segment, only possible for windowing)
<b>Windowing</b>	Activates interactive windowing with the mouse.
<b>Zoom</b>	Activates interactive image zooming with the mouse.
<b>Pan</b>	Activates interactive image panning with the mouse.
<b>Rotate</b>	<i>In the 3D overview segment only</i> Allows you to rotate the orientation cube in any direction with the mouse.
<b>SliceShift</b>	<i>In the slice segments only</i> Allows you to move the slice currently shown in the slice segment along two standard axes. Do not accidentally click on the slice cursor line.

---

<b>SliceThickness</b>	<i>In the slice segments only</i> Allows you to change the slice thickness of the image shown in this slice segment interactively. Do not accidentally click on the slice cursor line.
<b>View</b>	Opens a submenu:
<b>Fit into Segment</b>	Enlarges or reduces the image so that it fits optimally into the image segment.
<b>Original size</b>	Shows the image in its original size.
<b>Full size</b>	Displays the current segment in full window size. The other three segments are then hidden.
<b>Show All slices</b>	<i>In the 3D overview segment only</i> Shows or hides all slices in the overview segment.
<b>Slice1 (2, 3)</b>	<i>In the 3D overview segment only</i> Shows or hides display of individual slices.
<b>Volume box</b>	<i>In the 3D overview segment only</i> Shows or hides the volume box in the overview segment.
<b>Slice cursor</b>	<i>In the slice segments only</i> Shows or hides the slice cursor in a slice segment.
<b>MPR</b>	Selects MPR as the volume calculation method (default).
<b>MIP</b>	Selects MIP as the volume calculation method.
<b>Reset</b>	Resets all processing steps and again shows the images in <i>all</i> segments as they were when first loaded.
<b>Unload</b>	Removes the data set from the basic MIP/MPR viewer. All segments are then empty.

---

## Keyboard

In the basic MIP/MPR viewer you can activate processing modes in the segments via the keyboard.

1. Click on a segment.
2. Then press the corresponding key.

The display switches or the new operating mode is shown bottom left in the segment.

3. Now perform the processing step with the mouse.

---

<b>w</b>	Activates interactive windowing with the mouse.
<b>z</b>	Activates interactive image zooming with the mouse.
<b>p</b>	Activates interactive image panning with the mouse.

---

- 
- r** *In the 3D overview segment only*  
Allows you to rotate the orientation cube in any direction with the mouse.
  - s** *In the slice segments only*  
Allows you to move the slice currently shown in the slice segment along two standard axes.  
Do not accidentally click on the slice cursor line.
  - t** *In the slice segments only*  
Allows you to change the slice thickness of the image shown in this slice segment interactively.  
Do not accidentally click on the slice cursor line.
  - f** Enlarges or reduces the image so that it fits optimally into the image segment.
  - o** Shows the image in its original size.
  - s** *In the 3D overview segment only*  
Shows or hides all slices in the overview segment.
  - 1 (2, 3)** *In the 3D overview segment only*  
Shows or hides display of individual slices.
  - v** *In the 3D overview segment only*  
Shows or hides the volume box in the overview segment.
  - c** *In the slice segments only*  
Shows or hides the slice cursor in a slice segment.
  - x** Resets all processing steps and again shows the images in all segments as they were when first loaded.
- 

## Mouse clicks

In the basic MIP/MPR viewer you can also switch operating steps and calculation modes using mouse clicks.

1. Left-click on the display of the operating mode in a segment to scroll forward through the operating modes.  
-Or-  
Right-click to scroll backward through the operating modes.
2. Left-click on the display of the calculation method in the lower right corner of the segments to switch between MPR and MIP.

## Worklist (Expert Reading)



When you call Visage 7 Web Client with client type **Expert Reading** the patient window is shown in worklist view.

### Tip

Filter this list according to interpretation status **SCHEDULED** for a quick and easy overview of all studies that are scheduled for reporting.

### Single or dual monitor

Your user profile stores your monitor configuration. This means, the system will remember whether you worked with a single monitor or dual monitors during your last Visage 7 Web Client session.

**Information area (worklist)**

**Filter parameters and search criteria**

**Navigation bar**

**System messages**

**Toolbar (worklist)**

**Data source**

**Monitor selection**

**Display protocols list**

**Patient list (local) or Response list (network node)**

**Study list (worklist)**

Patient Name	Patient ID	Date of Birth	Sex	Insertion Date	Display Protocol	Description	Monitors
AULLINT TOP	FLTOP01	1922-07-24	F	2008-01-16 11:...	Blank Viewports	Use drag and drop t...	1
Abdomen/kidney	DB	1947-12-01	M	2008-01-16 11:...			
Amato Terence	000012	1965-03-17	F	2008-01-16 11:...			
ANIEVRYSM	NEURO	-	O	2008-01-16 11:...			
Angiologie	Angi	1999-07-01	O	2008-01-16 11:...			
anonym_pt	anonym_pt	1900-01-01	O	2008-01-16 11:...			
AUTOMINTERA...		1924-01-26	M	2008-01-16 11:...			
AVE+ ABDOMEN	0000002019	1978-10-10	M	2008-01-16 11:...			
Biplan Paul	192837465	1967-05-25	M	2008-01-16 11:...			
CANORUS, BEN	291101	1985-09-18	O	2008-01-16 11:...			
Dilow Raleigh A.	291101	1911-01-01	M	2008-01-16 11:...			
HAND PATIENT 2	9946122	-	M	2008-01-16 11:...			
HSA Circle of VW...	421876	-	M	2008-01-16 11:...			
INSTAN, JERRY	6171	-	F	2008-01-16 11:...			
Interesting Case	Testpatient	1940-03-05	F	2008-01-16 11:...			

Procedure Step	Status	Performer	Priority	Study Date/Time	Modalities in Study	Image Series	Study Description
				1997-04-28 11:58:32	RF	2	

Query finished

Trusted sites

## Information area (worklist)

This area of the patient window shows the user name you are logged in with.



### Hide/show filter criteria

Use this icon for collapsing (or expanding) the filter parameters and search criteria section of the screen.

**Worklist** Active window where you are now.

**User name** User currently logged in.

---

## Filter parameters and search criteria

In the worklist view of the patient window you can filter the patient list and search for specific patients and studies in just the same way as you can in the patient window of the client types View, Classic, and Expert.

Therefore, refer to the following sections for details about filter and search criteria:

- *Filter parameters* on page 44
- *Search criteria* on page 45

## Toolbar (worklist)

In the worklist, you start all processing steps with the icons on the toolbar.



### User-defined filter

You can select a predefined filter here.

---



### Reset to Default Filter

Activates the filter defined as the default filter.



### Set Filter Properties

The **Personal Settings** dialog box opens. You can define your own filters here.



### Reset Filter Settings

All the filter parameters you entered are removed. Click **Start Data Query** to display the un-filtered patient list again.



### Reset Input Fields

All the search criteria you entered are removed. Click **Start Data Query** to display a longer patient list again.

---

Visage PACS Web ▾	<b>Data source</b> Here you select where to search for data: on the local web server database or on a DICOM network node.
	<b>Start Data Query</b> Starts a data query with the current filter and search criteria in the selected data source. As a result the patient list of the web server or a response list from a DICOM node will be displayed.
	<b>Cancel Data Query</b> A query currently in progress is stopped. All patients found so far are displayed.
	<b>Retrieve Study from DICOM Node</b> If you did not request data in the local database, but on a network node, you will see the response list of the DICOM node in the patient window. If you find the patient you are looking for in this list, you nevertheless cannot work with this data immediately. You must first copy the patient to the local database with this icon. This icon is dimmed while the data source web server is selected, or while no patient is selected in a network response list.
	<b>Query Patient</b> This icon is active if a patient was selected in the local patient list and then a DICOM partner was selected in the data source drop-down list. The patient name and the patient ID of this patient are copied into the search criteria boxes and the search for this patient is started on the DICOM partner.
	<b>Forward</b> For a better overview the patient list does not display all patients found at a time. After a very generic patient search that results in more patients found, click this icon to page through the list of all patients found.
	<b>Backward</b> Click this icon to page backward through the list of all patients found.
	<b>DICOM Send</b> Opens a dialog box. Select the address(es) in your DICOM network to which you want to send the selected patient(s).
	<b>DICOM Quick Send</b> Sends the selected patient(s) to one or several DICOM nodes immediately. (Your system administrator has defined these addresses for you.)
	<b>Change Group Assignment</b> The <b>Change Group Assignment</b> dialog box opens. Here you can define which user groups have access to the selected patients.
	<b>Change User Assignment</b> The <b>Change User Assignment</b> dialog box opens. Here you can define which users have access to the selected patients.

**Launching Application**

Starts another web application if your system administrator has configured this for you.

The icon is only active if you have selected a patient.

**Change Procedure Step**

Procedure steps are tasks in the diagnostic reading workflow. With Visage 7 Web Client you can follow up on the task interpretation from scheduling this task to completion.

*For studies for which no procedure step exists:* Creates a new procedure step and allows you to assign the new procedure step a priority.

*For studies for which a procedure step exists:* Allows you to delete the procedure step, mark it as completed (or reset it to scheduled), or change its priority.

**Encrypted Data Transfer**

The images are transmitted encrypted.

**Non-encrypted Data Transfer**

The images are transmitted without encryption.

**Compression Level A**

Transfers images with compression level A. In compression level A, the images are usually only slightly compressed and without loss of quality. Your system administrator defines the compression rules.

**Compression Level B**

Transfers images with compression level B, which compresses the images even more.

Note that compressed images do not contain the full volume of data of the original. The diagnostic quality of the images is affected as a result.

**Preferably load thin slices**

When this option is selected the system will always load the original scans.

When the option is deselected the system will load a thick slice series instead of the original thin slice series if such a thick slice series is available on the Visage 7 server.

**Display as 3D volume**

Shows the selected study in the Visage 7 Client for advanced 3D evaluation.

**Automatic Synchronization with 3D volume**

Select this option to ensure that both the Visage 7 Web Client and the Visage 7 Client will always show images of the same patient.

## Monitor selection

Here you select the monitor configuration you are working with, that is whether you are working with a single or dual monitors.

This selection also filters the display protocols list. When you select *1 Monitor - Landscape*, for example, only those protocols are listed that have been optimized for single monitors with landscape display.

---



Select your monitor configuration and filter for the display protocols list.

**All protocols** shows all display protocols irrespective of their orientation and suitability for a particular monitor configuration.

---

## Patient list (local)

The local patient list shows all patients found in the web server database who match the search criteria, and to whom you have access.

The patient list contains only *one* entry for each patient even if several studies exist for this patient.

### Tip

You can sort the list by clicking on a column header.

---

---

<b>Patient Name</b>	Name of the patient
<b>Patient ID</b>	Patient's identification number
<b>Date of Birth</b>	Date of birth in YYYY-MM-DD format
<b>Sex</b>	<b>M</b> = male, <b>F</b> = female, <b>O</b> = other (unknown)
<b>Insertion Date</b>	Date and time when the patient data was sent to the Visage 7 server.

---

## Response list (network node)

If you selected a network node as the data source instead of querying the local Visage 7 server, you will see the response list of the DICOM node instead of the local patient list.

Here a patient name may be listed more than once as each entry represents exactly one study.



**Tip**

You cannot load patient data directly from the response list of a DICOM node into the display protocol viewer. You must first copy a patient to the local database by double-clicking the patient entry, or with the **Retrieve Study from DICOM Node** icon.

For an explanation of columns in the response list from a network node refer to section *Response list (network node)* on page 49.

## Display protocols list

Here you find a list of all display protocols that are suitable for the selected monitor configuration and study data.

<b>Display Protocol</b>	Name of the display protocol, which usually includes a description of how many viewports will be available in the viewer as well as an indication of the display layout used in these viewports.
<b>Description</b>	More detailed description for a display protocol.
<b>Monitors</b>	Indicates whether this display protocol supports single or dual monitor configuration.
<b>Orientation</b>	Indicates whether this display protocol supports landscape or portrait displays.
<b>Ranking</b>	Suitability ranking of a display protocol for the study data selected in the patient or study list section of this window. This column may be hidden.

## Study list (worklist)

Lists all studies that are available on the Visage 7 server for the selected patient.

<b>Procedure Step</b>	Indicates whether a procedure step exists for this study.
<b>Status</b>	Indicates the status of the procedure step: scheduled, in progress, discontinued, or completed.
<b>Performer</b>	Indicated the name of the Visage 7 Web Client user who is currently reviewing the images of this study, or who completed a procedure step.
<b>Priority</b>	Low, medium, or high. You can use this column to sort the study list, for example.
<b>Study Date/Time</b>	Date and time of the study in the format: YYYY-MM-DD and hh:mm:ss (24-hour clock).

---

<b>Modalities in Study</b>	Modalities used to examine the patient.
<b>Image Series</b>	Number of series in this study.
<b>Study Description</b>	Description of the study
<b>Referring Physician</b>	Name of the referring physician
<b>Accession Number</b>	Job number of the patient in the HIS/RIS (hospital or radiology information system)
<b>Study ID</b>	Study's identification number
<b>Reading Physician</b>	Name of the physician who read this study on the system that sent the data to Visage 7.
<b>Study Comment</b>	Comment text about the study.

---

## Display Protocol Viewer (Expert Reading)

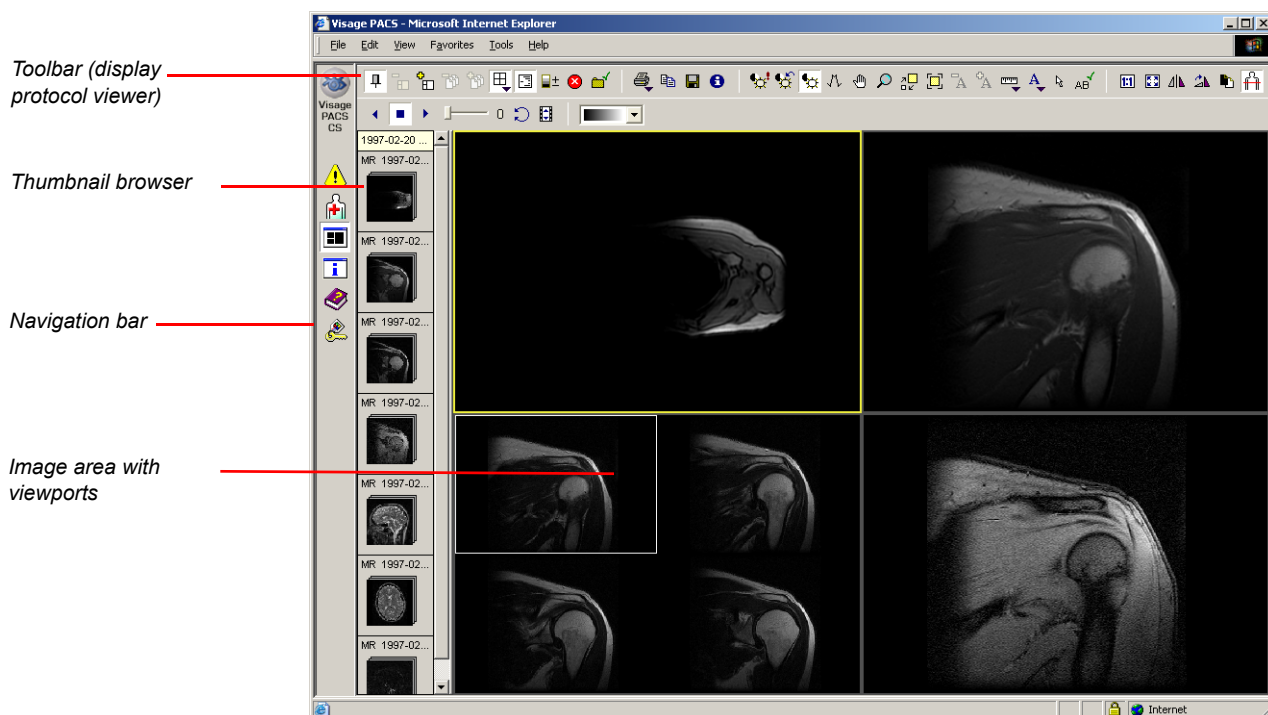


In client type **Expert Reading** the display protocol viewer replaces the viewer and report windows of the other client types.

The display protocol viewer is particularly well-suited for primary reading.

### Caution

When reviewing images of a current and previous study be sure to show image texts in the display protocol viewer. This will help you distinguish the two studies in the various viewports. Be sure you have correctly identified the current study when reporting on the image data.







### Thumbnail browser

The thumbnails in this section of the screen represent the series you selected from the worklist. The series thumbnails are grouped by study (if you have loaded more than one study).

You can load series into the viewports of the image area from here (drag & drop).

## Toolbar (display protocol viewer)

	<b>Auto-Hide Toolbar/Lock Toolbar</b> Hides or redisplay the viewer toolbar. If the toolbar is hidden move the cursor over the area where it would normally be shown to redisplay it temporarily and to access its icons.
	<b>Display Mode</b> Opens a selection list with different layouts. Here you can switch from stack mode to tile mode in the currently selected viewport.
	Select, for example, the <b>2x2</b> view. The viewport is divided into 4 segments in this example. Depending on the number of images that are loaded, up to 4 images will be displayed in the selected viewport at one time.
	<b>Next Viewer Layout</b> Loads the next viewer layout defined in the currently active display protocol.
	<b>Previous Viewer Layout</b> Loads the previous viewer layout from the currently active display protocol.
	<b>Previous Scene</b> Loads the previous scene of a series containing several multiframe images (or scenes).
	<b>Next Scene</b> Loads the next scene of a series containing several multiframe images (or scenes)
	<b>Hide/Show Image Text</b> Shows or hides text in the image.
	<b>Gamma Adjustment</b> Opens a dialog box for the adjustment of the gamma curve of images. This adjustment applies to all Visage 7 Web Client image viewers.
	<b>Cancel loading</b> Stops loading images.
	<b>Mark study as read</b> Sets the status of the procedure step for this study to completed.  This icon is only active if a procedure step exists for the study whose images are currently shown in the viewer.
	<b>Edit Report</b> Opens an existing report for editing or creates a new study report on the web server.
	<b>Select Images</b> Offers options for selecting images for printout on a DICOM printer.
	<b>Select all Images</b> Selects all loaded images for DICOM print.

**Range Selection**

Opens a dialog box for range selection.

**Deselect all Images**

Undoes the current selection for DICOM print (no images are selected after you click this icon).

**Print**

Allows you to print images on a connected DICOM or Windows printer.

**Windows Print**

Opens the **Windows Print** dialog box and prompts you to select a printer and print settings. All images currently displayed on the screen will be printed.

**DICOM Print**

Opens the **DICOM Print** dialog box and prompts you to select a printer and print settings.

Only those images that are marked for DICOM print (solid green box in the lower right-hand corner of the image segment) will be printed.

**Copy to Clipboard**

Copies the currently displayed images to the clipboard. From there, you can paste the copied images into another Windows program (e.g. a presentation or NetMeeting program).

**Export Images**

Exports the currently displayed images to a directory on your local PC. You can save the images as DICOM images or in BMP or JPEG format.

**DICOM Information**

Shows the DICOM information of the current image.

**Predefined Level Presets**

If different window or filter values are predefined for the current image type, you can call them up here and apply them to the loaded images.

**Reset Window Level**

Resets the window and filter values back to default values (i.e. the values with which the images were loaded).

**Windowing**

If this icon is pressed, you can use the mouse to change the grayscale display (brightness/contrast) in the images.

While **Windowing** is active, the mouse pointer looks like this:

**Edge Enhancement**

This filtering enhances the contrast in images.

While **Edge Enhancement** is active, the mouse pointer looks like this:



**Pan**

Allows you to move the image in the segment. If the portions of the image disappear off the screen after enlargement, you can pan them back into view.

While **Pan** is active, the mouse pointer looks like this:

**Magnifying Glass**

Allows you to enlarge a portion of an image by factor 2. As soon as you release the mouse button, the enlargement is no longer displayed.

While **Magnifying Glass** is active, the mouse pointer looks like this:

**Zoom**

Allows you to enlarge or reduce the displayed images steplessly using the left mouse button.

While **Zoom** is active, the mouse pointer looks like this:

**Quick Zoom**

Permits temporary zooming of a portion of an image. As soon as you release the mouse button, the image returns to its original size.

While **Quick Zoom** is active, the mouse pointer looks like this:

**Previous Annotated Image**

Scrolls up in the stack of loaded images and shows the next image containing annotation graphics or annotation text.

**Next Annotated Image**

Scrolls down in the stack of loaded images and shows the next image containing annotation graphics or annotation text.

**Measurement Functions**

Opens a selection list with measurement functions.

**Distance Measurement**

Permits measurement of distances in images.

While this tool is active, the mouse pointer looks like this:



Measured values are indicated in exact millimeters (mm; in CT and MR images), estimated millimeters (mm[?]), or in pixels (pix) if no distance measurement in millimeters is possible.

**Caution**

The accuracy of distance measurements is  $\pm 2$  pixels. Larger errors can occur if the image is displayed with reduced matrix size, that is if not every original pixel is shown on the screen due to zoom-out. For optimum accuracy we recommend zooming into the structure of interest as much as possible. The accuracy is further limited by the physical resolution of the acquisition itself. If the monitor used for display does not permit exact pixel selection, the inaccuracy can be greater still.

**Angle Measurement**

Permits measurement of angles in images.

While this tool is active, the mouse pointer looks like this:

**Caution**

The accuracy of angle measurements depends on the length of the shorter of the two angle legs. The longer the angle legs are, the better the accuracy.

For example:

Length of shorter angle leg (measurement error):

10 pixels ( $\pm 12^\circ$ ), 20 pixels ( $\pm 6^\circ$ ), 50 pixels ( $\pm 2.5^\circ$ ), 100 pixels ( $\pm 1.1^\circ$ )

Larger errors can occur if the image is displayed with reduced matrix size, that is if not every original pixel is shown on the screen due to zoom-out. For optimum accuracy we recommend zooming into the structure of interest as much as possible. The accuracy is further limited by the physical resolution of the acquisition itself. If the monitor used for display does not permit exact pixel selection, the inaccuracy can be greater still.

**Calibrate Distance**

Permits calibration of distances in images.

While this tool is active, the mouse pointer looks like this:

**Density Measurement**

Permits measurement of grayscale values (pixel values) in images.

While this tool is active, the mouse pointer looks like this:

**ROI Ellipse**

Permits evaluation of circular or elliptical regions of interest (ROIs) in grayscale images.

While this tool is active, the mouse pointer looks like this:



**ROI Rectangle**

Permits evaluation of rectangular regions of interest (ROIs) in grayscale images.

While this tool is active, the mouse pointer looks like this:



Measured values are indicated in exact square millimeters (mm<sup>2</sup>; in CT and MR images), estimated square millimeters (mm[?]<sup>2</sup>), or in pixels (pix) if ROI measurement in millimeters is possible.

**Caution**

The relative error of the elliptical or rectangular ROI measurements is  $\pm 2$  pixels/ (shorter radius or shorter side).

For example:

Shorter radius or shorter side (measurement error):

10 pixels ( $\pm 20\%$ ), 20 pixels ( $\pm 10\%$ ), 50 pixels ( $\pm 4\%$ ), 100 pixels ( $\pm 2\%$ )

Larger errors can occur if the image is displayed with reduced matrix size, that is if not every original pixel is shown on the screen due to zoom-out. For optimum accuracy we recommend zooming into the structure of interest as much as possible.

The accuracy is further limited by the physical resolution of the acquisition itself. If the monitor used for display does not permit exact pixel selection, the inaccuracy can be greater still.

**Density Profile**

Permits evaluation of a density profile along a straight line (an arrow indicates the direction).

While this tool is active, the mouse pointer looks like this:

**Create Annotation**

Opens a selection list with annotation functions.

**Arrow Annotation**

Allows you to annotate images with arrows.

**Text Annotation**

Allows you to annotate images with text.

**Arrow and Text Annotation**

Creates a combined arrow plus text annotation.

**Circle Annotation**

Allows you to draw a circle around an area of interest.



**Spine Labeling**

Allows you to label vertebrae or intervertebral spaces in images.

Clicking this icon opens the **Spine Labels** dialog box. In this dialog box you can select what you want to label, whether you want to proceed from top to bottom or from bottom to top, and if you want to label vertebrae consecutively or only every second or third.

**Select Annotation/Measurement**

Allows you to select an annotation graphic in order to move or to delete it, or to change its display properties.

**Save Annotations**

Saves any annotations you have created in the currently loaded data back to the web server

**Original size**

Resets the loaded image to its original size.

**Fit into Segment**

Resizes the current image to fit it optimally in the image segment.

**Mirror**

Mirrors the current image about its vertical axis.

**Rotate**

Rotates the current image 90° clockwise.

**Invert**

Inverts the grayscale display of an image. Bright areas are now shown dark and dark areas are shown light.

**Show Scoutlines**

Shows the position of selected images on the corresponding reference images.

Note that this icon will only become active if a CT or MR study has been loaded that contains suitable image data.

**Show All Scoutlines**

Shows all scoutlines in the reference image.

**Show Border Scoutlines**










Shows only the first and last scoutline in the reference image.

**Show Border and Current Scoutlines**

Shows the scoutline of the current image and the first and last scoutline in the reference image.

**Show Current Scoutline**

Shows only the current scoutline in the reference image.

	<p><b>Cine Mode Backward</b></p> <p>Plays back the loaded images like a movie. The playback direction is backward.</p>
	<p><b>Cine Mode Stop</b></p> <p>Stops movie playback.</p>
	<p><b>Cine Mode Forward</b></p> <p>Plays back the loaded images like a movie. The playback direction is forward.</p>
	<p><b>Cine Mode Speed</b></p> <p>If the slider is far left, movie playback stops. If the slider is far right, the movie is played back at maximum speed.</p>
	<p><b>Bouncing Cine</b></p> <p>If you click this icon, the movie will run without interruption: When playback reaches the last image, the movie runs backward to the first image, then forward again, etc.</p>
	<p><b>Interactive Cine Mode</b></p> <p>When <b>Interactive Cine Mode</b> is active, the images of a series (or scene) will play back when you move the mouse pointer over the image area. This gives the impression of a movie being played back.</p> <p>Mouse up or right: play forward  Mouse down or left: play backward  Mouse stopped: still image</p> <p>The direction in which you are supposed to move the mouse can be configured by your system administrator.</p>
	<p><b>Display as 3D volume</b></p> <p>Shows the selected study in the Visage 7 Client for advanced 3D evaluation.</p>
	<p><b>Automatic Synchronization with 3D volume</b></p> <p>Select this option to ensure that both the Visage 7 Web Client and the Visage 7 Client will always show images of the same patient.</p>
	<p><b>Color Map</b></p> <p>Allows you to display the loaded images with another color map that highlights your current diagnostic problem in a better way.</p>

## Image area with viewports

For most display protocols the image area of this viewer is subdivided into several viewports. Viewports are semi-independent viewer segments, which you use to compare images and series from the same or different studies.

Viewports can be linked for synchronized scrolling. All other image navigation and manipulation functions apply only to the images in the viewport that is currently active (highlighted by a colored border).

Double-click a viewport to show it fullscreen. Double-click a second time to return to the viewport's original size and location.

Use the +/- or number (1, ...8) keys on your keyboard to display more viewports or to hide viewports or to switch between predefined layouts.

## Icons

Once you have loaded images or started manipulating images icons may appear in the upper right-hand corner of the image segments. These icons alert you to information you should consider when interpreting the images.



Lossy compressed image: The quality of the image may have been affected (artifacts). The quality percentage is indicated next to the icon.

This warning triangle remains visible even if the image texts are hidden.



When loading images into one of its viewers, Visage 7 Web Client checks the DICOM header information in every single image.

If this DICOM header information does not agree with the patient and study data stored in the Visage 7 database for one or several images, this icon is displayed in the upper right-hand corner of the affected images.



The display protocol may define the sort order for the images of a series in the display protocol viewer according to certain criteria. If images cannot be sorted according to these criteria the system alerts you to this fact with this icons.



This icon in the upper right-hand corner of the image segment indicates that calibration has been applied to distance lines in this image.



This icon indicates that the displayed images do not originate from an original scan series (thin slice series) but were generated by a Visage 7 thick slice compilation rule.

## Popup menu

For your convenience the image area of the Visage 7 Web Client viewers offers a popup menu for quick and easy access to frequent image processing functions.



Right-click in the image display area.

### Note

Note that many image display functions are available from both the toolbar and popup menu. Others functions are available only from the toolbar or only from the popup menu. The following table describes only those functions that have not already been explained in the context of the toolbar.

#### Apply to All

Applies the last editing step to all images of a loaded series.

#### Auto Apply to All

When this option is selected, all image editing steps are applied to all images of a loaded series immediately (and not just to one image alone).

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<b>Undo</b>	Undoes the last editing step.
<b>Show/Hide Overlays</b>	Shows overlays if any have been created for the loaded images.
<b>Hide/Show Shutter</b>	Shows or hides a shutter, if a shutter was created for the loaded image.
<b>Delete Measurement/Annotation</b>	Deletes a selected measurement or annotation graphic.
<b>Delete all Measurements</b>	Deletes all measurement graphics in the currently selected image.
<b>Delete all Annotations</b>	Deletes all annotation graphics in the currently selected image.
<b>Delete all Measurements and Annotations</b>	Deletes all measurement or annotation graphics in the currently selected image.
<b>Select Image</b>	Selects the current image (i.e. the image highlighted by a white border) for DICOM print. DICOM print selection is indicated by a solid green box in the lower right-hand corner of the image segment.
<b>Remove Image Selection</b>	Removes the current image from the DICOM print selection.
<b>SMPTE 1/2</b>	Calls one of two available test images for performing a display quality check of your monitor.
<b>Synchronized Scrolling</b>	Allows you to select a mode for synchronized scrolling.
<b>Show/Hide Measurements and Annotations</b>	Shows or hides measurement and annotation graphics stored in an image.

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### Tip

The SMPTE images you can display here are not suitable for calibration of DICOM printouts. Use *TestImage\_SMPTE\_1k* instead. You find this test case in the patient list. If no patient of this name exists in your patient list, ask your system administrator to insert this test case into the Visage 7 system from your installation medium. We recommend that you protect the *TestImage\_SMPTE\_1k* test case against deletion, so that it will not be deleted automatically when disc space is running low.

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# Loading Image Data

In order to view and evaluate images in Visage 7 Web Client first locate the data on the web server.

Once you have found the patient and examination data you wish to review, load these images, and display them in one of the available viewers.

This section helps you with:

- *Finding patients and transferring them to the study/series window*
- *Selecting series and images*
- *Loading images into a viewer*
- *Loading a presentation state*
- *Loading a series into the basic MIP/MPR viewer*
- *Loading 3D volume data into Visage 7 Client*
- *Loading images from the worklist*

## Finding patients and transferring them to the study/series window



You use the patient window to search for and select the patient whose images you wish to display.

If you have only just called up Visage 7 Web Client, the patient window is already open.

### Note

The patient list shown here conforms to the filter and search criteria you used the last time you queried the database. Visage 7 Web Client records the filter and search settings for the patient list from one session to the next, i.e. if you close the program in between times.

You can scroll through the patient list until you have found the patient you are looking for. Or you can specifically search for a patient by entering filter and search criteria.

### Tip

Searching in a database is called "querying". For that reason the icons in the Visage 7 Web Client patient window are labeled *Start Data Query*, *Stop Data Query*, and so on.

Searching for patient data in the patient window involves one or several of these tasks:

- *Selecting filter criteria*
- *Entering search criteria*
- *Using predefined filters*
- *Starting a query in the local database*
- *Searching and retrieving patients from other network nodes*
- *Transferring patient data to the study/series window*

## Selecting filter criteria

You can limit the patient list displayed and, for example, list just the patients you examined over a certain period.



1. Click the **Show filter criteria** icon in the top left corner of the patient window, if filter criteria selection boxes are currently not shown.
2. Select from among these filter settings.

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<b>Study Date</b>	Here you can select a period. After a database query, the patient list will only show patients examined over this period.
	<b>Today</b> - lists all patients examined today.
	<b>Yesterday</b> - lists all patients examined yesterday.
	<b>The last X days</b> - lists all patients examined over the last X days.
	<b>Date</b> - lists all patients examined on this day.
	<b>From date to date</b> - lists all patients examined within the stated period.
	<b>All</b> - lists all patients, irrespective of examination date.

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<b>Modality</b>	<p>Here you can filter the patient list according to modality.</p> <p>Click the ▼ icon next to the filter parameter <b>Modality</b>.</p> <p>Check one or more modalities.</p> <p>After a new database query, only patients examined with this modality or these modalities will be shown.</p>
<b>Physician</b>	<p>Here you can filter the patient list according to the name of the <b>referring, performing, and/or reporting physician</b>.</p> <p>Click the ▼ icon next to the filter parameter <b>Physician</b>.</p> <p>Check the box <b>Referring physician, Performing physician, and/or Reporting physician</b> and type the name of the physician. Or type A for all physicians whose name begin with A, for example.</p> <p>-Or-</p> <p>Open a list of all names by clicking on the ▼ icon behind an entry field. A list drops down with all referring, performing, or reporting physicians of the studies you have access to. Select a name.</p> <p>If you are searching in the network, the patient list can only be filtered according to the referring physician.</p>
<b>Location</b>	<p>Here you can filter the patient list according to the patient's ward or the name of the institution where the patient was examined.</p> <p>Click the ▼ icon next to the filter parameter <b>Location</b>.</p> <p>Select a <b>Ward</b> or <b>Institution Name</b>.</p>
<b>Insertion Date</b>	<p>Here you can sort the patient list according to the date when the patients' data were transferred to the web server.</p> <p><b>Today</b> - lists all patients whose studies were transferred to the web server today.</p> <p><b>Yesterday</b> - lists all patients whose studies were transferred to the web server yesterday.</p> <p><b>The last X days</b> - lists all patients whose studies were transferred to the web server during the last X days.</p> <p><b>Date</b> - lists all patients whose studies were transferred to the web server on that particular day.</p> <p><b>From date to date</b> - lists all patients whose studies were transferred to the web server within the stated period.</p> <p><b>All</b> - lists all patients, irrespective of when their studies were transferred to the web server.</p>
<b>Interpretation Status</b>	<p>Here you can filter the patient list according to the processing status of procedure steps:</p> <p><b>SCHEDULED</b> - lists all patients whose studies contain procedure steps that are scheduled for interpretation.</p> <p><b>IN PROGRESS</b> - lists all patients whose studies are currently being reviewed in one of the Visage 7 Web Client installations in your network.</p> <p><b>DISCONTINUED</b> - lists all patients whose studies contain procedure steps with interpretation status discontinued.</p> <p><b>COMPLETED</b> - lists all patients whose studies contain procedure steps with interpretation status completed.</p>

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▼ Modality: All

1. Click the small triangle to the left of the filter criteria.

A list with various options opens.

2. Select a suitable option.

The selected option is shown to the right of the filter criterion.

3. Click **OK** or press the **RETURN** key.

### Using the calendar function

If you want to filter by examination date or insertion date, you can use the calendar to select dates.

December 2005 ▼

1. Click the small triangle to the right of the selection list.

The calendar opens.

December 2005						
Mo	Tue	We	Th	Fr	Sa	Su
26	27	28	29	30	31	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
1	2	3	4	5	6	7
Today: 05.12.2005						

2. Click the year on the blue title bar to switch to the next or previous year.
3. Click the arrow buttons on the blue title bar to switch to the next or previous month.
4. Select the day from the table.

The calendar window closes and the new date is shown in the selection list.

#### Tip

You can also set the date directly in the input box. Click the day, month, or year and change the entry by clicking the **arrow up** and **arrow down** keys, holding the **Ctrl** key down.

### Resetting filter settings

You can undo your filter settings.



Click the **Reset Filter Settings** icon on the toolbar.

-Or-



Click the **Reset to Default Filter** icon on the toolbar.



## Entering search criteria

In the upper right and central area of the patient window you will find the entry fields for the search criteria. You can restrict the patient list further using the search criteria.



1. Click the **Show filter criteria** icon in the top left corner of the patient window, if search criteria entry boxes are currently not shown.
2. Enter search criteria.

<b>Patient Name</b>	Searches for a patient by name.  Enter the patient name in the format: <i>last name first name middle name prefix suffix</i> . For example: <i>Doe John Jack Dr.</i> for <i>Dr. John J. Doe</i> .
<b>Patient ID</b>	Searches for a patient ID.
<b>Patient Comment</b>	Searches for a patient whose studies contain a specific comment.
<b>Date of Birth</b>	Searches for a patient by date of birth.  Use the date format indicated next to the search box. (Your system administrator can configure this format for you). Also remember to enter the complete date of birth here (day + month + year). You cannot, for example, search by year of birth only.
<b>Study ID</b>	Searches for a patient with this study ID.
<b>Study Description</b>	Searches for a patient with this study description.
<b>Accession Number</b>	Searches for a patient with this accession number.

### Searching with wildcards

If you can only remember part of a name, ID, or comment text you can use wildcards in your search. Or simply type the first few letters of a search string Visage 7 Web Client will automatically search for all those patients whose name begin with the letters you have entered, for example.

1. Simply type **Mil** to find the patient names **Miller**, **Milford**, **Miltner**, etc.

-Or-

Use an asterisk at the beginning. This stands for any or no string. Type **\*mil**, for example, to find all the above plus **Hamilton**.

-Or-

Use a question mark anywhere in your search string. A question mark stands for exactly one character. Type **AB??34** in the patient ID box, for example, to find the patient IDs **AB1234**, **AB0034**, and **AB11345678**.

2. Press the **RETURN** key to confirm your entries.

The patient list is updated.

## Resetting search criteria

In order to remove all entries from search fields:



Click the **Reset Input Fields** icon on the toolbar.

## Using predefined filters

Using predefined filters helps you speed up your workflow. A predefined filter allows you to store and reuse a set of filter and search criteria.

### Selecting filters

If filters have already been defined:



Select a suitable filter from this drop-down list on the toolbar.

### Defining your own filters

You can define your own filters.



1. Click the **Set Filter Properties** icon on the toolbar.

The **Personal Settings** dialog box opens.

**Personal Settings**

Filter Name:  save as ID:  Default Filter: ☐

Filter Description:

▼ Study Date: All Patient Name:  Study ID:   
 ▼ Modality: All Patient ID:  Study:   
 ▼ Physician: All Patient Comment:  Description:   
 ▼ Location: All Date of Birth:   YYYY MM DD Accession No:   
 ▼ Insertion Date: All  
 ▼ Interpretation Status: All

ID:	D...	Filter Name:	Study Date:	Modality:	Interpretation St...	Physician:	Patient Name:	Patient ID:	Patient Comment:	Study ID:

OK Apply New Delete Cancel

Trusted sites

2. Set the filter and search criteria for the new filter.

3. Enter a meaningful name for the filter under **Filter Name**.

4. Enter a description of the filter under **Filter Description**.

5. Check **Default Filter** if you want this filter to be selected by default whenever you start Visage 7 Web Client.
6. Click **Apply** to confirm your new filter definition.  
The new filter is added to the list.

You can now define more filters, change existing filters, or delete filters:

Click on a filter in the list to edit its settings.

-Or-

Click the **New** button to start a new filter definition.

### Deleting filters

1. Select the filter from the list in the **Personal Settings** dialog box.
2. Click the **Delete** button.
3. Click **OK** to close the dialog box.

## Starting a query in the local database

Your system administrator can set your system to start the query automatically every time you enter a filter or search criterion and press **RETURN**. You must start a database query explicitly if you have reset filter or search criteria with the toolbar icons or if the function has not been configured for you.

Visage PACS Web



1. Select the web server as the data source.
2. Click the **Start Data Query** icon on the toolbar.  
The patient list is updated. For a better overview the patient list does not display all patients found at a time.
3. After a rather generic search use these two icons to page through the entire list of patients found.

## Searching and retrieving patients from other network nodes

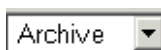
If you cannot find the patient you were looking for on the web server, you can search for his or her data on one of the connected network nodes or in an archive.

To do this perform the following three steps:

- You search for the patient on one of the connected network nodes.
- You retrieve patient data from there, i.e., transferring the data to the web server.
- After a brief time, you search for the patient again on the web server.

**Note**

Access to other data sources may be disabled for some user groups. Please ask your system administrator to help you if you find only the web server in the data source list.

**Querying a network node**

1. Select a network node as the data source.

2. Enter further filter criteria such as the patient name and patient ID.

The **Modality** box is inactive and therefore dimmed when you search a network node.

When searching in the network, you should always be as precise as possible with the search criteria you enter. Otherwise the number of hits you will obtain could be very high.



3. Click the **Start Data Query** icon on the toolbar.

The response list from the network node shows all the patients found.

If searching a network node takes too long you might want to cancel the search and specify your search and filter criteria more precisely.



1. Click this icon to stop the database query.

Now only those patients who have been found so far are listed.

2. Enter more precise filter search criteria.



3. Start the database query again.

**Shortcut to querying network nodes**

If a patient's current examination is available on the web server but you would also like to load a previous study for comparison, Visage 7 Web Client offers you a particularly straightforward way of doing so.

1. Click on an entry in the local patient list.



2. Select another network node from the data source list (e.g. an archive node).



3. Click the **Query Patient** icon on the toolbar.

The name and ID of the selected patient are copied into the filter criteria section. You do not have to type this data again.

A query of the selected network node is started immediately.

If the patient is found on this network node, he or she is now displayed in the patient list.

### ***Importing data***

1. Select the patient(s) whose images you want to retrieve from the response list of the network node.



2. Click the **Retrieve Study from DICOM Node** icon on the toolbar.

-Or-

Double-click on a patient entry to transfer his or her data only.

The data of the patient(s) are copied to the local database of the Visage 7 server.

#### **Tip**

When you retrieve data from a network node the new patient(s) may initially be assigned to your user account alone (a message is displayed in this case). Also assign the new patient(s) to other users or user groups if you want to make their data available for other users as well.

### ***Updating the patient list***

1. Select the web server as the data source again.
2. Start a new query to the local database (**Start Data Query**).

The patient list of the local Visage 7 database is updated. It now includes the patients retrieved from the network. You can now work with this data in the usual way.

## Transferring patient data to the study/series window

The patient list as a rule contains only *one* entry for each patient even if several studies exist for a patient.

Once you have found the patient in the local database, transfer the data to the study/series window.

Double-click the patient entry.

The data of the selected patient is transferred to the study/series window. The study/series window opens.

### Note

On rare occasions it may not be possible to load a patient into the study/series window because the patient's data are currently being updated from the HIS/RIS. In this case a message is displayed informing you that the patient is temporarily locked. Try again later.

## Selecting series and images



Once you have found the patient you were looking for, the next step will be to select the images you wish to review. You use the study/series window for this.

Double-clicking on a patient in the patient window automatically displays the study/series window. It contains all examinations and series of the patient selected in the patient list.

Here you can select the study, series, or images you want to review in one of the viewers.

### Checking if a series is complete

If you are reviewing images very shortly after or even while the examination is still in progress not all images may have been transferred to the web server yet.

You can tell whether a series is complete by comparing the **Number of Images** and the **Highest Image Number** columns in the series list:

- **Number of Images** indicates the number of images from this series stored on the web server.
- The **Highest Image Number** indicates the total number of images in this series.

Modality	Number of Images	Highest image number
CT	20	21
CT	20	21

In this example one image of each series has not (yet) been transferred to the web server.

Return to the patient window after a while, query the modality node and transfer the examination to the Visage 7 server again in this case.

#### Tip

In an emergency situation always contact the physician who is conducting the examination by phone to make sure you have received all series and images.

#### Note

The *Number of Images* and *Highest Image Number* columns only provide information about the transfer status of series from modalities that work with single frame images. For multiframe images *Number of Images* and *Highest Image number* give no indication about the transfer status of a series or study.

### Archived data

If you select data in the study/series window which has already been archived and is no longer available in the online memory, a message is displayed. You must first retrieve this data from the archive before you can view these images.

Images of studies that were only partially archived are displayed. But only those images that are still on the web server can be shown, the remaining images need to be retrieved from the archive first.

See *Searching and retrieving patients from other network nodes*

## Filtering the study/series list

If the imaging systems that send data to the system support marking of images with flags you can filter the study/series list so that only studies and series containing marked images are listed.



1. Drop down the marked images filter box.

2. Select **Flag**, **Star**, or **Flag&Star**.

-Or-

Select **All** to reset the filter.

## Selecting data from the study or series list

You can select an entire study or an entire series from the study or series lists. You *cannot* select individual images here.

### Selecting a study

The first study in the list is selected automatically. Only **one** study can be selected at a time.

Click the required study in the study list.

The series list shows all series of this study. Depending on how your system is configured, either the first series or all series are selected.

### Selecting series

Click the required series in the series list.

-Or-

Select several series using the **Ctrl** or **Shift** key.

## Selecting data in the preview area or preview window

The preview area of the study/series window and the preview window allow you to select the study, series, or individual images from one or several series.

### Note

If you load individual images from more than one series, Visage 7 Web Client merges these images into one series in the viewer.

But note the following restrictions for image selection: Images from different modalities or single-frame and multiframe images cannot be loaded together.

### *Showing the preview area or preview window*



Click this icon on the study/series window toolbar to show (or hide) the preview area next to the study and series list.



Click this icon on the navigation bar to show the preview window.



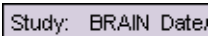
If your series contain a large number of images, clicking the **Truncate Thumbnails for Large Series** icon in the toolbar helps you with a quick overview of your study.



**Note**

If **Truncate Thumbnails for Large Series** is selected one image followed by three dots is shown in the preview section or window for each large series. (Your system administrator can configure the threshold for what the system considers large series.)

Double-clicking such an image in the preview section or window or double-clicking the series header will load the entire series (and not only this one image).

***Selecting an entire study in the image preview*****Selecting a study**

Click on the title bar of the study in the preview area or preview window.

-Or-

Click on the title bars of all series in the preview area or preview window, one after another.

-Or-



Click this icon on the toolbar.

All images in the preview area or preview window are selected

**Deselecting all**

You can undo your selection.



Click on the title bars of the studies in the preview area or preview window again.

-Or-

Click on the title bars of all series in the preview area/preview window again.

-Or-



Click this icon on the toolbar.

All images in the preview area or preview window are deselected.

***Selecting entire series in the image preview*****Selecting series**

Click on the title bar(s) of the series in the preview area or preview window.

-Or-

Click on the background in the preview area or preview window.

-Or-

Select **Select all** from the popup menu.

All images in the series are selected.

### Deselecting series

You can undo your selection.

Series: NEURO\_BRAIN

Click on the title bar(s) of the series in the preview area or preview window again.

-Or-

Click on the background in the preview area or preview window again.

-Or-



Click this icon on the toolbar to deselect the entire study.

-Or-

Select **Deselect all** from the popup menu to deselect the images of one series only.

## Selecting individual images

### Selecting images

Select several images using the **Ctrl** or **Shift** key.

-Or-

Left-click and drag the mouse pointer over a range of images.

### Deselecting images



Click this icon on the toolbar to deselect the entire study.

-Or-

Select **Deselect all** from the popup menu to deselect the images of one series only.

### Inverting the selection of images

Click on the title bar of the entire study to invert the selection of images in the entire study.

-Or-

Click on the title bar of a series to invert the selection of images in this series.

-Or-

Select **Invert selection** from the popup menu.

Previously selected images of the series are deselected. All other images of the series are selected.

## Displaying the previous or next patient in the study/series window

If the patient you loaded into the study/series window was not the one you were actually looking for, you can move on to the next or previous patient without having to return to the patient window.

Next or previous patient refers to the patient below or above the current patient in the patient list.



1. Click this icon on the toolbar of the study/series window.

The data of the previous patient (i.e. the patient above the selected patient in the patient list) is displayed.



2. Click this icon on the toolbar of the study/series list.

The data of the next patient (i.e. the patient below the selected patient in the patient list) is displayed.

## Loading images into a viewer



You have selected the series and images that you want to review in the study/series list or in the preview window.

There are several methods for loading images into a viewer. The method you use depends on your selection of images and on which image viewer you want to use.

### Loading by double-click

You use this method when you want to load an entire study, series or an individual image into viewer 1 quickly.

#### Loading individual series or images

Double-click a series or presentation state in the corresponding list.

-Or-

Double-click on the title bar of the series or presentation state in the preview area or preview window.

-Or-viewer

Double-click an image in the preview area.

The selected series, presentation state, or image is loaded into viewer 1. Viewer 1 is displayed.

## Loading a study



1. Select **Load all series as one**.

2. Double-click the study in the study list or double-click the title bar of the study in the preview section.

All series of this study are loaded into viewer 1.

The images are merged into one “viewing series”. This means that you can scroll through an entire study image by image or using cine mode, but you cannot scroll series by series in the viewer.

### Note

Note that images from different modalities or single-frame and multiframe images cannot be merged this way.

-Or-



1. Deselect **Load all series as one**.

2. Double-click the study in the study list or double-click the title bar of the study in the preview section.

Only the first series of this study is loaded into viewer 1 and the viewer 1 window is displayed.

## Loading images into viewer 1 or 2

1. Select the study, series, or image(s) for viewer 1.

You can work in the study or series list, the preview area, or the preview window.



2. Click this icon.

3. Select the study, series, or images for viewer 2.



4. Now click this icon.



5. Click one of these icons in the navigation bar to move on to viewer 1 or 2.

## Loading images for comparison

When loading images into compare mode you proceed in a slightly different way in **Classic** or **Expert** mode.

### *Image comparison in Classic mode*

When you are working in **Classic** mode you proceed in two steps:

- First you load the images you wish to compare into viewers 1 and 2.
- Then you call compare mode.

1. Select the study, series, or images for viewer 1.

You can work in the study/series list, preview area, or preview window.



2. Click this icon.

3. Select the study, series, or images for viewer 2.



4. Click this icon.



5. Now click one of these icons to display the series or images side by side or one above the other in compare mode.

The compare view is displayed.

### *Image comparison in Expert mode*

In **Expert** mode, you can load two series directly into compare mode.

1. Select two series or images.



2. Click one of these icons to display the images side by side or one above the other in compare mode.

The compare view is displayed.

#### Tip

If you select the entire study or one series, the first two images of this study or series are displayed in the compare view.

## Using the local cache

If you are working with slow data transmission rates and your studies comprise a large number of images we recommend you activate the local cache option.

With this option Visage 7 Web Client will download images into the local cache memory on the hard disk of your computer.

For reasons of data security the data is, however, stored on your local hard disk only temporarily for the duration of your current session. As soon as you log off from Visage 7 Web Client all image data are removed from your local hard disk.

You activate the local cache option in the study/series window. Visage 7 Web Client offers two alternatives for working with local cache.

### Local Cache

With local cache active, all images that you load into a viewer once during your session are automatically downloaded onto your computer for the duration of the current session.



1. Click **Use Local Cache** on the toolbar of the study/series window.

Local cache is active.

2. Double-click a series, for example, to load it into viewer 1.

Loading the images may be slow the first time. But when you return to this series later on in your session and load these images into a viewer a second time, the images will be displayed immediately.

The **Preloaded Images** column of the series list tells you that these images have been downloaded to your local cache.

### Preload Study

Alternatively you can actively preload an entire study **before** displaying its images the first time.



1. Be sure **Use Local Cache** is selected.



2. Click **Preload Study** on the toolbar of the study/series list.

In the **Preloaded Images** column of the series list you can monitor the progress.

You can preload as many studies as you like. The amount of data you can preload is only restricted by the storage capacity of your hard disk.

Local cache works on the FIFO (First In, First Out) principle. If not enough memory is available to store the images you have requested, the first images that you loaded are removed from the memory.

## Using data compression and encryption

### Data compression

When loading image data either from the image preview or study/series window you can choose between loading the original data (which might take longer) or loading the data in compressed format.

Visage 7 Web Client supports the following compression methods:

- No compression
- Lossless JPEG compression
- Lossy JPEG compression (with specification of the quality factor)
- Lossy wavelet compression (with specification of the quality factor)

For each image type your system administrator has defined two compression levels:

- Compression level A  
This level as a rule transfers images in their original data format or compressed with a lossless method.
- Compression level B  
This level as a rule transfers images in a data format compressed with a lossless or lossy method.

#### Note

Some image types cannot be compressed in lossless mode.

Lossy compressed images do not contain the full amount of data of the original. The quality of the images might be affected as a result.



Images compressed with a lossy compression method are highlighted by a yellow warning triangle top right in the Visage 7 Web Client viewers.

Loading images with compression level A usually takes longer than loading images with compression level B.

### Encryption

Visage 7 Web Client always uses secure data transfer protocols for transfer of patient data over the intranet or Internet.

As an additional level of data security you can choose to transfer data in encrypted (encoded) form.

Under certain circumstances, this option may not be available, as your administrator may have specified that data must always be transmitted in encrypted form.

If available, you should always select encrypted data transfer if you are working outside a firewall.

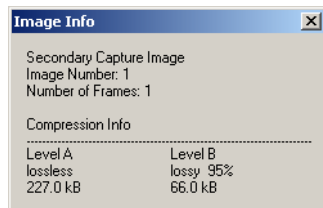
Encrypted data transmission as a rule takes longer than unencrypted transfer.

## Selecting data compression

### Checking compression level settings

1. Right-click an image from a series in the image preview.
2. Select **Image Info** from the popup menu.

The **Image Info** box informs you about the compression level settings for this image type.



### Selecting a compression level



1. Click one of these icons on the toolbar of the study/series window to select the appropriate compression level.

## Selecting data encryption

### Selecting encrypted transfer



Click **Encrypted Data Transfer** on the toolbar of the study/series window.

### Selecting non-encrypted transfer



Click **Non-encrypted Data Transfer** on the toolbar of the study/series window.

## Loading thick or thin slice series

If your Visage 7 receives CT or MR series with very thin slice thicknesses and very large image numbers (which is usually the case if these series are to be used in high-quality 3D reconstruction) then loading and viewing large thin slice series would slow down the system performance in Visage 7 Web Client. Your system administrator can therefore configure the Visage 7 server to automatically compile thick slice images from such thin slice series. The thick slice series will have fast download times and still provide sufficient image quality for an overview of a situation. Nevertheless you may be able to view the original thin slice images as well.



With the **Show Thin Slice Series** icon in the study/series window you can toggle between thick slice series only and thin plus thick slice series display in the series list and you can explicitly select a thin slice series for display, for example, if they are interested in detail.

### Viewing a thick slice series

You will use this alternative most of the time.



T...	Modality
	CT

1. Deselect **Show Thin Slice Series** on the study/series window toolbar.  
Only thick slice series are now shown in the series list.
2. Double-click a series in the series list to load its images into viewer 1, for example.

### Viewing a thin slice series

You may choose this option for individual series in order to see detail.



T...	Mo...	Num
	CT	40
	CT	400

1. Select **Show Thin Slice Series** on the study/series window toolbar.  
The series list now shows both thick and thin slice series next to each other.  
You can tell which one of two series is the thick slice and which one is the thin slice version from its icon and from the number of images it contains.
2. Explicitly double-click the thin slice version of a series to load it into viewer 1, for example.

## Canceling loading or unloading images

With slow data transmission rates and a large number of images the process of loading images in the viewer may be slow.

You can stop this process, for example, if all images of interest to you are already displayed.

### Cancel loading



Click this icon on the toolbar of the image window.

-Or-

Press the **Esc** key.

Only the images loaded so far are available in the viewer now.

### Unloading images

If necessary, you can remove loaded images from the viewers.

- ✕ Click this icon in the upper right corner of the viewer.  
The viewer is displayed empty.

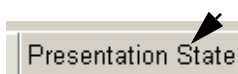
## Loading a presentation state

Instead of loading the original series and images of a study into one of the viewers you may choose to work with presentation states.

A presentation state comprises only those images that the reporting physician considered interesting. A presentation state contains references to various images from the series of a study and stores these references together with display settings and evaluation results.

In the patient window you can search for studies containing presentation state objects (modality PR). In the study/series window you can toggle between series and presentation state list.

Presentation states are usually available in both compression levels (A and B) unless matrix reduction has been configured for any of the images they refer to. In that case no presentation states are available for that particular compression level and the study may contain a different number of presentation states for level A and B.



1. Click on the **Presentation State** tab card in the study/series window.

Visage 7 Web Client queries its database for presentation states stored for this study. If presentation states are found they are listed now and the thumbnails of the first presentation state of this study are shown in the image preview section.

### Note

Only one presentation state can be selected at a time and its thumbnails displayed.



2. Toggle compression levels, if no presentation states are shown, even though you are certain they exist for this study.
3. Double-click a presentation state in the list to load its images and move on to viewer 1 in one go.

-Or-



Select a presentation state and load it into viewer 1 or 2.



Subsequently move on to one of the viewer windows.

## Loading a series into the basic MIP/MPR viewer

In the basic MIP/MPR viewer it is only possible to display single series from the CT and MR modalities. Moreover, CT and MR series must fulfill certain technical requirements to be suitable for MIP/MPR reconstruction.

When you load a series into the basic MIP/MPR viewer, the program checks whether the images have been scanned with the required acquisition parameters and whether 3D reconstruction is possible. If this is not the case, an error message appears. CT/MR series can only be loaded into the basic MIP/MPR viewer from the study/series window, not from the preview window.



1. Loading the patient into the study/series window.
2. Select exactly one CT or MR series from the series list.

-Or-

Select individual images in the preview section in order to use only these images for 3D reconstruction.



3. Click **Load to Basic MIP/MPR Viewer** on the toolbar.

Visage 7 Web Client switches to the basic MIP/MPR viewer window and starts loading the series. This may take some time for large series.

## Loading 3D volume data into Visage 7 Client

In addition to the Visage 7 Web Client basic MIP/MPR viewer, which gives an initial spatial impression of your image data, the Visage 7 solution also features a full-scale 3D viewer: the Visage 7 Client. In order to be able to use this viewer for advanced 3D viewing and evaluation a 3D volume data set must have been compiled from the original scan series.

- *Loading 3D volume data*
- *Synchronizing Visage 7 Web Client and Visage 7 Client*

### Loading 3D volume data



1. Select a series for which a 3D volume data set exists in the series list.



2. Click **Display as 3D volume** on the toolbar.

This starts the Visage 7 Client application and loads the selected volume data set into its **View** screen.

Refer to the Visage 7 Client user documentation for information on how to optimize 3D display and evaluate the image data there.

While you evaluate the 3D data set here you can simultaneously show the corresponding 2D series in one of the Visage 7 Web Client viewers.

### Synchronizing Visage 7 Web Client and Visage 7 Client



Activate this icon on the toolbar of the Visage 7 Web Client study/series window to synchronize image display in both Visage 7 applications.

Synchronization ensures that both the Visage 7 Web Client and Visage 7 Client will always show image data of the same patient.

When you page on to a next patient in one of the Visage 7 Web Client windows this will automatically load a volume data set of that next patient onto the Visage 7 Client view screen. If no volume data set exists for this next patient the Visage 7 Client view screen is cleared.

#### Note

Note that synchronization works on a patient level and will still allow you to view and compare different series or studies of the same patient in 2D and 3D display.

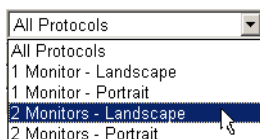
## Loading images from the worklist

When you have logged on to Visage 7 Web Client with client type Expert Reading the patient window is shown in worklist view.

Worklist view helps you locate studies scheduled for interpretation quickly. It also allows you to load a study with a display layout that has been optimized for the respective image types with only a few mouse clicks.

## Selecting your monitor configuration

Depending on your monitor configuration Visage 7 Web Client will suggest a number of suitable display protocols.



Select the monitor configuration you are working with.

Once you have done so Visage 7 updates the display protocols list. Only those protocols are now shown that have been configured for this monitor configuration.

-Or-

Select **All Protocols** to show the display protocols list unfiltered.

### Tip

You will only have to select your monitor configuration once, as the system stores this information in your user profile. The next time you log on to Visage 7 Web Client with Expert Reading this monitor selection will be immediately active again.

## Interpreting the display protocols list

### Display protocol concept

In Visage 7 the term display protocol is used in the sense of “hanging protocol” according to the DICOM standard.

A display protocol defines the screen layout in the display protocol viewer of the Expert Reading client type. This includes how many viewports or viewer segments are shown for comparing series and studies, the size of viewports and how they are arranged on your monitor or on dual monitors, and how images are displayed in each of these viewports.

A set of factory-default display protocols come with your system. These display protocols have been optimized for typical image types, combinations of image types, and monitor configurations. In addition to these factory defaults our service personnel can adapt or create display protocols according to your own requirements.

### Suitability ranking

In the display protocols list, protocols are shown sorted according to their suitability for the study currently selected in the study list.

A column to the far right in the display protocols list shows the rank of each protocol. This column may be hidden in your system as display columns are shown in descending order of their suitability by default.

If required you can redisplay the **Ranking** column:

Click the column separator line in the column header at the end of the last column and drag it to the right:



### Protocol designations

Be aware that protocols that are designated “blank” will not show images immediately. You are expected to load series into the viewports explicitly from the thumbnail browser of the display protocol viewer window.

All other display protocols will show images immediately when you load a study into the display protocol viewer.

## Searching for a patient and study

When searching for a patient and study in the local Visage 7 database or on connected network nodes you proceed in just the same way as in the patient window of the client types View, Classic, and Expert.

Please refer to sections *Selecting filter criteria* (page 108), *Entering search criteria* (page 111), *Using predefined filters* (page 112), *Starting a query in the local database* (page 113), *Searching and retrieving patients from other network nodes* (page 113) for details.

## Loading images into the display protocol viewer

There are various options for how to proceed when loading study data from the worklist.

### *Selecting the patient*

Double-click a patient name to load the first study of this patient with the first display protocol in the display protocol list.

Patient Na...	Patient ID	Date of Birth	Sex	Insertion Date	Display Protocol	Description	Monitors	Orientation
Larry's L Spine	656565	-	O	2007-04-02	Series View	One series per view...	2	Landscape
MANUS DEXTER	FLTOP05	1953-11-04	M	2007-04-02	Blank Viewports	Use drag and drop t...	2	Landscape
MDP_CHILD_01,	FLTOP05	1997-11-03	F	2007-04-02				
MDP_TOP,	FLTOP03	1920-05-03	F	2007-04-02				
MR Abdomen	23003	2000-01-01	M	2007-04-03				
MR Ankle	23006	2000-01-01	M	2007-04-03				
MR Ankle multi	23006	2000-01-01	M	2007-04-03				
MR dataset Brain	reg2	1911-01-01	M	2007-04-02				
MR Knee	23002	2000-01-01	F	2007-04-03				
MR LSpine	23001	2000-01-01	M	2007-04-03				
MR Shoulder	23005	2000-01-01	F	2007-04-03				

Procedure Step	Status	Performer	Priority	Study Date/Time	Modalities in Study	Image Series	Study Descriptio
Interpretation	SCHEDULED		MEDIUM	2006-07-31 11:55:37	MR	4	MR Ankle
Interpretation	SCHEDULED	-	MEDIUM	2006-10-27 18:53:33	MR	4	MR Ankle

### Selecting the study

1. Click a patient to show a list of all his or her studies.
2. Double-click one of these studies to load it into the display protocol viewer with the first display protocol in the display protocol list.

Patient Na...	Patient ID	Date of Birth	Sex	Insertion Date	Display Protocol	Description	Monitors	Orientation
Larry's L Spine	656565	-	O	2007-04-02	Series View	One series per view...	2	Landscape
MANUS DEXTER	FLTOP05	1953-11-04	M	2007-04-02	Blank Viewports	Use drag and drop t...	2	Landscape
MDP_CHILD_01,	FLTOP05	1997-11-03	F	2007-04-02				
MDP_TOP,	FLTOP03	1920-05-03	F	2007-04-02				
MR Abdomen	23003	2000-01-01	M	2007-04-03				
MR Ankle	23000	2000-01-01	M	2007-04-03				
MR Ankle multi	23006	2000-01-01	M	2007-04-03				
MR dataset Brain	reg2	1911-01-01	M	2007-04-02				
MR Knee	23002	2000-01-01	F	2007-04-03				
MR LSpine	23001	2000-01-01	M	2007-04-03				
MR Shoulder	23005	2000-01-01	F	2007-04-03				

Procedure Step	Status	Performer	Priority	Study Date/Time	Modalities in Study	Image Series	Study Descriptio
Interpretation	SCHEDULED		MEDIUM	2006-07-31 11:55:37	MR	4	MR Ankle
Interpretation	SCHEDULED	-	MEDIUM	2006-10-27 18:53:33	MR	4	MR Ankle

### Selecting the display protocol

1. Click a patient to show a list of all his or her studies.
2. Click a study to select it.
3. Double-click a display protocol in the display protocol list.

Patient Na...	Patient ID	Date of Birth	Sex	Insertion Date	Display Protocol	Description	Monitors	Orientation
Larry's L Spine	656565	-	O	2007-04-02	Series View	One series per viewp...	2	Landscape
MANUS DEXTER		1953-11-04	M	2007-04-02	Blank Viewport	Use drag and drop to...	2	Landscape
MDP_CHILD_01,	FLTOP05	1997-11-03	F	2007-04-02				
MDP_TOP,	FLTOP03	1920-05-03	F	2007-04-02				
MR Abdomen	23003	2000-01-01	M	2007-04-03				
MR Ankle	23000	2000-01-01	M	2007-04-03				
MR Ankle multi	23006	2000-01-01	M	2007-04-03				
MR dataset Brain	reg2	1911-01-01	M	2007-04-02				
MR Knee	23002	2000-01-01	F	2007-04-03				
MR LSpine	23001	2000-01-01	M	2007-04-03				
MR Shoulder	23005	2000-01-01	F	2007-04-03				

Procedure Step	Status	Performer	Priority	Study Date/Time	Modalities in Study	Image Series	Study Descripti
Interpretation	SCHEDULED		MEDIUM	2006-07-31 11:55:37	MR	4	MR Ankle
Interpretation	SCHEDULED	-	MEDIUM	2006-10-27 18:53:33	MR	4	MR Ankle

### Loading two studies

1. Click a patient to show a list of all his or her studies.
2. Click a study to select it.
3. Hold the **Shift** or **Ctrl**. key down while you click the second study.

The display protocols list is updated. It now shows display protocols that have been optimized for comparing studies in top position.

4. Double-click one of these protocols.

For example, select a protocol labeled *Curr / Prior* to compare the images of a current study with those of a previous examination.

Patient Na...	Patient ID	Date of Birth	Sex	Insertion Date	Display Protocol	Descr ...	Monitors	Orientation	R...
MDP_CHILD_01,	FLTOP05	1997-11-03	F	2007-04-02	2 Studies View	Displ ...	2	Landscape	30
MDP_TOP,	FLTOP03	1920-05-03	F	2007-04-02	Blank Viewports	Use ...	2	Landscape	25
MR Abdomen	23003	2000-01-01	M	2007-04-03					
MR Ankle	23000	2000-01-01	M	2007-04-03					
MR Ankle multi	23006	2000-01-01	M	2007-04-03					
MR dataset Brain	reg2	1911-01-01	M	2007-04-02					
MR Knee	23002	2000-01-01	F	2007-04-03					
MR LSpine	23001	2000-01-01	M	2007-04-03					
MR Shoulder	23005	2000-01-01	F	2007-04-03					
MR Spine	23004	2000-01-01	F	2007-04-03					
Niere, Mesenteri...	O25	-	M	2007-04-02					

Procedure Step	Status	Performer	Priority	Study Date/Time	Modalities in Study	Image Series	Study Descripti
-		-		2006-07-31 11:55:37	MR	4	MR Ankle
Interpretation	SCHEDULED		MEDIUM	2006-10-27 18:53:33	MR	4	MR Ankle

#### Note

You can only load studies of the same patient. You cannot combine studies of different patients in the display protocol viewer.



### ***Loading image data encrypted***

Visage 7 Web Client always uses secure data transfer protocols for transfer of patient data over the intranet or Internet.

However, if you are working outside a firewall, you may choose additional encryption when loading image data.



Click **Encrypted Data Transfer** on the toolbar of the worklist window.

-Or-



Click **Non-encrypted Data Transfer** on the toolbar of the worklist window.

For more information about encryption see also *Encryption* on page 125.

### ***Loading thin slice series***

Just like in the study/series window of the client types View, Classic, and Expert you may choose between preferably loading thick or thin slice series for MT or CT series with very large image numbers and very thin slice thicknesses.



Deselect the icon **Preferably load thin slices** to always load the thick slice series if such a series is available on the server.

-Or-



Select **Preferably load thin slices** to explicitly load the original thin slice series whenever both a thin and thick slice series is available on the server.

For more information about thin and thick slice series see also *Loading thick or thin slice series* on page 126.

### ***Selecting a compression level***

When loading image data from the worklist you can choose between loading the original data (which might take longer) or loading the data in compressed format.

For each image type your system administrator has defined two compression levels:

- Compression level A

This level as a rule transfers images in their original data format or compressed with a lossless method.

- Compression level B

This level as a rule transfers images in a data format compressed with a lossless or lossy method.

**Note**

Some image types cannot be compressed in lossless mode.

Lossy compressed images do not contain the full amount of data of the original. The quality of the images might be affected as a result.



Images compressed with a lossy compression method are highlighted by a yellow warning triangle top right in the Visage 7 Web Client viewers.

Loading images with compression level A usually takes longer than loading images with compression level B.



1. Click one of these icons on the worklist toolbar to select the appropriate compression level.

# Displaying and Editing Reports

If your Visage 7 Web Client is connected to a HIS/RIS that manages study reports, these reports can be transferred to the web server. In Visage 7 Web Client you can then view the report text only or show the report text together with images of this study.

With the Visage 7 Web Client report editor you can also edit reports stored on the web server or create new reports.

## Caution

Visage 7 can receive and display DICOM Structured Reports. The layout in which these structured reports are shown in Visage 7 Web Client can be configured by Customer Service.

However, if Customer Service makes any layout changes at your request, you must validate these changes to ensure that all relevant report information is actually shown in the HTML report translation of these reports.

This section explains the procedures for:

- *Displaying a report*
- *Retrieving a report from the RIS*
- *Printing a report text*
- *Editing a report*
- *Creating a new report*

## Displaying a report

When you display reports in Visage 7 Web Client be sure to:

- Double-check that the report and the images it is assigned to refer to the same study.

Errors in report assignment may occur if the HIS/RIS that sends the report manages several reports under one accession number, or if the patient information in the Visage 7 database was recently updated.

- Double-check if the report is the final report or a draft version.

If a report is a draft this should always be indicated in the report text.

**Automatic report display**

Visage 7 Web Client can be configured to display the report and images automatically if a report is present on the Visage 7 server.

In that case, the report with image window is shown instead of the viewer when you load images.

**Manual report display**

If automatic report display is not configured, proceed as follows:



1. Switch to the study/series window.
2. Double-click a study for which a report exists.

The study is loaded into viewer 1. Viewer 1 is displayed.



3. Open the report with image view.

-Or-



Open the report window view.

**Showing footnote information**

When a report was received from the HIS/RIS in the format DICOM Structured Report it may contain footnote information, which is not immediately visible in the HTML report version shown in the report window.



Move the mouse pointer over these icons which indicate hidden footnote text to show this information in a tooltip.

## Retrieving a report from the RIS

The **Report** column in the patient and study list shows whether a report exists for a study on the system.

Just because no report is listed here does not mean that no report exists for this study in the HIS/RIS. The report might have been written after the study had been transferred from the modality to the Visage 7 system.

In such cases, you can retrieve the report in the HIS/RIS (hospital or radiology information system).

You may also wish to retrieve a report from the HIS/RIS if you have found a report on the Visage 7 system that you suspect is not up to date.



1. Switch to the study/series window.
2. Select the study for which you want to request a report from the HIS/RIS.



3. Click the **Query Report** icon.

The HIS/RIS is now searched for a report for this study. If reports are found they will be transferred to the Visage 7 server. Older report versions will be overwritten.

It may take some time to find and transfer a report.

4. Then load the study into the viewer.



5. Open the report with image view.

-Or-



Open the report window view.

## Printing a report text

You can print out the report text.

1. Place the mouse pointer on the report text.
2. Open the popup menu with the right mouse button.
3. Select the **Print** menu item.

The report text will be output on the connected default Windows printer.

## Editing a report

Visage 7 Web Client offers basic functionality for editing reports on the web server.

### Note

Be aware that when you edit a report you will only change the latest report version on the Visage 7 server. Your changes are not communicated to the HIS/RIS where a report was originally created.

Therefore, if your hospital works with a HIS/RIS and normally uses this system to create and manage reports, always change report text there rather than in Visage 7 Web Client. Most likely, your system administrator will have configured the system in such a way that the **Edit Report** icon is not shown at all in this case.



1. Switch to the study/series window.

2. Double-click a study for which a report exists.

The study is loaded into viewer 1. Viewer 1 is displayed.



3. Open the report with image view.



4. Click the **Edit Report** icon on the toolbar of the image display section.

The report section of the screen is now shown in editing mode.

5. Click anywhere in the report text (white background) and add text, delete text, or change text.

You cannot change the report header (gray background).

6. Select text in order to format it.



7. Use this icon, for example, to highlight text.

The Visage 7 Web Client report editor offers a number of basic text formatting options which allow you to change character and paragraph formats.

With the **Cut**, **Copy**, **Paste** icons you can move text around in your report or insert text from or in other Windows text processing programs.



8. Use this icon to save your new report (i.e. upload it to the web server).

-Or-



Use this icon to undo your editing and show the report in the version that is stored on the web server again.

-Or-



Click this icon in the upper right corner of the viewer section to close the study (images and report) without saving changes.

## Creating a new report

If no report exists for a study on the web server so far, you can use Visage 7 Web Client to create a new report.

### Note

Note that your new report will be stored on the web server only. It will **not** be sent to the HIS/RIS.



1. Load the study for which you want to create a new report into one of the viewer windows (for example viewer 1).



2. Click the **Edit report** icon on the toolbar of the image display section.



Visage 7 Web Client switches over to the report with image window, creates a new (empty) report and displays it in the report editor section of the screen.

3. Add text here and remember that you cannot change the report header (gray background).
4. Select your text in order to format it.
5. Use this icon, for example, to highlight text.



The Visage 7 Web Client report editor offers a number of basic text formatting options, which allow you to change character and paragraph properties.

With the **Cut**, **Copy**, **Paste** icons you can move text around in your report or insert text from or in other Windows text processing programs.



6. Use this icon to save your new report (i.e. upload it to the web server)

-Or-



Click this icon in the upper right corner of the viewer section to discard your report.





# Reviewing Images



Visage 7 Web Client provides numerous options for adjusting image display in the viewer windows to suit your needs.

- A toolbar contains icons for accessing image display and editing functions quickly. This selection of icons is slightly different for different image types and modalities.
- By selecting a suitable screen layout you can display one or several images at a time.
- Series and scenes can be played back automatically or mouse-controlled (cine or movie mode). They can also be played back in loops.
- Display of scoutlines in reference images provides an excellent overview when reviewing CT or MR studies.

All image display and editing functions described here are available in all Visage 7 Web Client image viewers unless otherwise specified (viewer 1, viewer 2, compare mode, and report with image window)

## Tip

When working in the Visage 7 Web Client image viewers remember that all changes you make to the display of images are temporary, you cannot save edited images back to the database of the web server.

In this section you will find basic information about different image types and how to interpret image text and icons:

- *Single frame and multiframe images*
- *Image text and image icons*

You will also learn how to proceed when:

- *Selecting screen layout and image display*
- *Scrolling through the loaded images*
- *Viewing angio scenes*
- *Displaying scoutlines*
- *Editing images*
- *Evaluating images*

## Single frame and multiframe images

Different modalities use different data acquisition techniques that basically result in two different image types: single frame images and multiframe images.

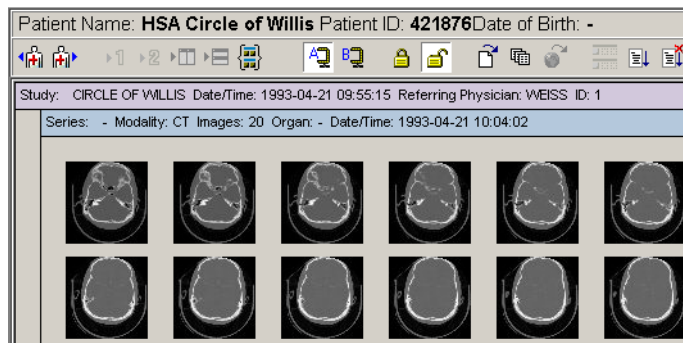
- Single frame images: CT, MR, CR, SC, RTImage, MG, DX, HC, IO, OT, PX, RG, ES, GM, XC
- Multiframe images: XA, US, NM
- RF (Radio fluoroscopy) or PT (Positron emission therapy) images may either be single or multiframe images depending on the data acquisition technique used in an examination.

Single frame and multiframe images are handled differently by the Visage 7 Web Client application program with respect to data management and scrolling.

### Single frame images

This classification scheme is valid for modalities using single frame images:

- *Study* - An examination performed in order to clarify a diagnostic problem.
- *Series* - A set of images acquired as part of an examination with a certain modality, on a certain day, and at a certain time. During an examination more than one series can be acquired if one series would not be sufficient to answer the diagnostic problem.
- *Image* - Individual images belong to a study and series. Technically speaking, every single frame image is a data file with so-called “DICOM header information” about the series, study, and patient it belongs to.



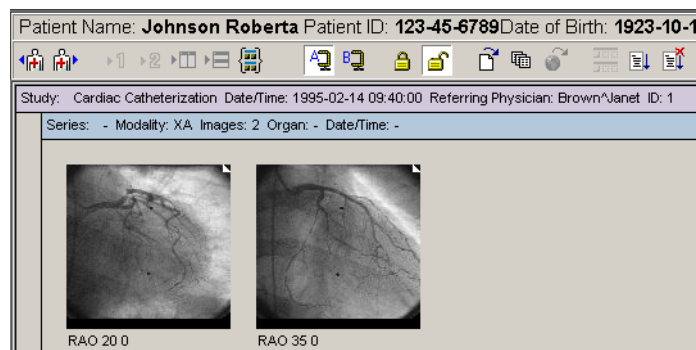
### Multiframe images

For modalities using multiframe images, a “study” is an examination performed in order to clarify a diagnostic problem, just as it is for modalities using single frame images. Series and images, however, are treated slightly differently.

A multiframe image comprises a set of frames which are stored “sandwich-like” in a single multiframe file. All images belonging to a multiframe have one common DICOM image header.

One series may contain more than one multiframe image, that means more than one stack of images.

In the Visage 7 Web Client image preview a multiframe image is indicated by a dog ear in the top right-hand corner.



### Tip

In some modalities multiframe images are also called **scenes**, indicating that they provide dynamic information, that is, they display a process over time.

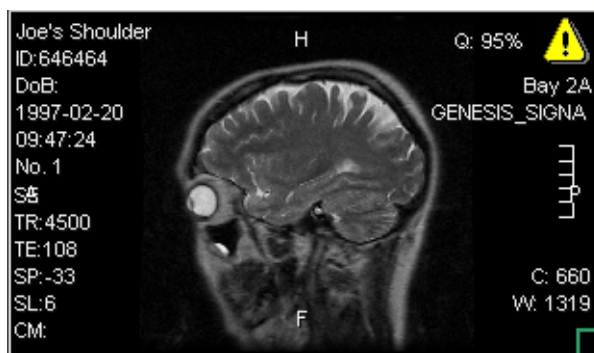
## Image text and image icons

In the Visage 7 Web Client viewer windows, patient, study, and image information can be shown as image text or icons in the images.

### Image text

The image text is arranged in text blocks around the edges of an image in this way:

(1)	(2)	(5)
(2)		(2)
(3)	(2)	(4)



- (1) Patient and examination data
- (2) Orientation labels
- (3) Acquisition parameters
- (4) Window values and filter settings
- (5) Hospital and system information including information on compression level and image quality.

Image texts that are very long are truncated. For example, if a study comment text is very long, only the first 64 characters are displayed.

Depending on the modality and image type, additional information can be displayed or certain information can be omitted or only displayed in certain modalities. In XA scenes, for example, orientation labels are hidden. Your system administrator can configure the image texts for each modality.

The information contained by multi-value tags are shown comma-separated. Note that your system administrator may have configured some of the information from multi-value tags to be hidden.

## Image icons

In addition to image text, image information may be shown in the form of icons in the images.

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### Changed image information



Lossy compressed image: The quality of the image may have been affected (artifacts). The quality percentage is indicated next to the icon.

This warning triangle remains visible even if the image texts are hidden.



When loading images into one of its viewers, Visage 7 Web Client checks the DICOM header information in every single image.

If this DICOM header information does not agree with the patient and study data stored in the Visage 7 database for one or several images, this icon is displayed in the upper right-hand corner of the affected images.



If you have manipulated a presentation state image this icon appears in the upper right-hand corner. It warns you that the current image no longer corresponds to the image saved in the presentation state at the diagnostic workstation.



This icon in the upper right-hand corner of the image segment indicates that calibration has been applied to distance lines in this image.



This icon indicates that the displayed images do not originate from an original scan series (thin slice series) but were generated by a Visage 7 thick slice compilation rule.

### DICOM print selection

In the lower right-hand corner of each image you will see a small green box which indicates whether the image is currently selected for DICOM print.



An empty box indicates no selection.



A solid box indicates selection for DICOM print.

### Marked images

These flags are only available in a Siemens diagnostic environment.

The image is marked with a flag.





The image is marked with a star.

#### **Exam status**

These flags are only available in a Siemens diagnostic environment.

New: no report status has been issued yet.



Prepared: the images are ready for reporting.



Reported: the study has been reported.



Signed off: the study has been signed off by the physician.



Unknown: no report status available.

#### **Report status**

These flags are only available in a Siemens diagnostic environment.



Dictated: the report has been dictated.



Written: the report has been written.



Validated: the report has been validated by the physician.

---

## Selecting screen layout and image display

As soon as you have loaded images they are displayed in the viewer window in a layout determined by the modality. One or more images may be seen simultaneously. The toolbar is usually displayed above the image(s).

### Changing the layout of the image area

You can choose between different screen layouts depending on whether you are interested in an overview of a series or in the details in an image.

## Selecting a layout



1. Click the **Display mode** icon on the toolbar of the viewer and hold the mouse button down.

A list of available screen layouts drops down.



2. Select a layout.

If more image segments are available than images have been loaded, the remaining segments remain empty.

### Tip

In compare mode you can choose different layouts in the two screen halves.

## Switching over to full-screen display

Double-click an image in the viewer.

This image is shown in full-screen display. The **1x1** layout is well-suited for image editing.

## Showing, hiding, or moving the toolbar

If the toolbar obstructs your work when it is displayed above the image section, you can move it to the left-hand side, or you can hide it while you are viewing images.



Click on the **Change Toolbar Location** icon to toggle the toolbar position.

-Or-



Click the **Auto-Hide Toolbar** icon to have more space available for image display.

Move the mouse cursor over the area where the toolbar was last shown to redisplay it temporarily.

-Or-



Click the **Lock Toolbar** icon to show the viewer toolbar permanently again.

## Showing and hiding image text

When you select a different screen layout, the font size of the image texts remains the same. But as the images are smaller in a 4x4 layout than in a 1x1 layout, for example, image text might cover part of the diagnostic information.

You can therefore temporarily hide image texts to create more space for diagnostic information:



1. Click this icon to hide obstructing text in images.
2. Click the icon again to restore the image texts.

## Showing and hiding graphic objects and shutters

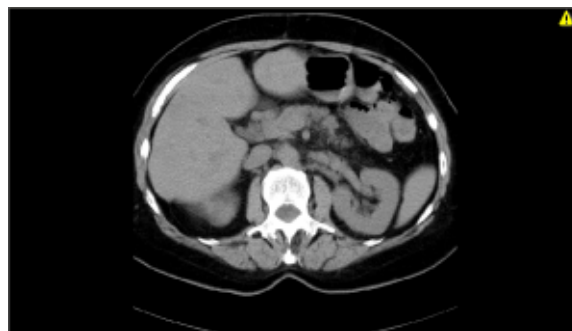
The loaded images may contain graphic objects (e.g. evaluation results) or shutters generated with another system during evaluation.

Display of shutters or graphics can be set as default for images types, or you can show or hide them while working in the viewer windows.

### Note

Display of graphic elements and shutters may affect the performance.  
Graphic objects and shutters are always hidden in cine mode.

1. Select **Show/hide overlays** from the popup menu.  
The graphic objects are shown now.
2. Select **Show/hide shutters** from the popup menu.  
The shutters are shown now.
3. Select the popup menu items again to hide overlays or shutters again.



Left: Shutter on, right: Shutter off

## Working with color palettes

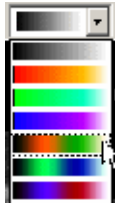
Visage 7 Web Client can display medical images not only as grayscale images but also in color.

Using color may help you highlight anomalies, making them more noticeable for certain diagnostic problems.

Visage 7 Web Client provides a number of predefined color palettes that you can apply to loaded images.

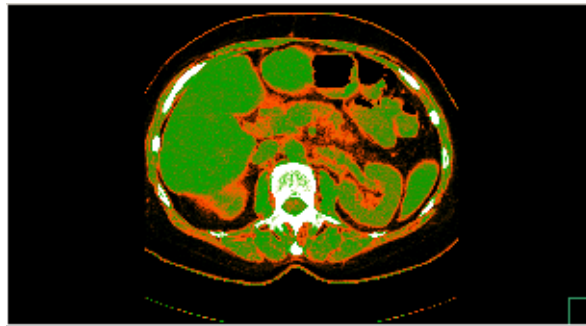
**Tip**

Your system administrator can define that images of certain modalities will be displayed with one of the available color palettes by default.



1. Drop down the list of available color palettes.
2. Select one of the predefined palettes.

All loaded images are now no longer displayed as grayscale images but with this color palette.



## Toggling single view and split screen

You can always switch back and forth between a single viewer window and compare mode even after you have started processing the loaded images.

Click on one of these icons to change views:



Displays viewer 1 and viewer 2 side by side.



Displays viewer 1 and viewer 2 one above the other.



Displays only viewer 1.



Displays only viewer 2.





Displays viewer 1 and the study report (if available).

## Scrolling through the loaded images

You will usually have loaded more images of a patient into one of the viewers than can be displayed in the image area at a time. All the images that cannot be displayed due to lack of space are placed in the background.

You can scroll through the loaded images to obtain an overview and to select images that you then want to process and evaluate.

Visage 7 Web Client offers a range of options for scrolling image by image. Moreover, an automatic, fast scrolling function is available that gives you the impression of a movie being played back.

Cine mode has advantages when viewing dynamic series, because it displays processes that change over time especially clearly.

If you are working in compare mode scrolling in both screen halves can be synchronized.

### Position indicator bar

At the bottom edge of the display window a position indicator bar is visible.

- Dark green bars represent those images that are in the background and not displayed.
- Light green bars represent the images currently displayed.
- A white bar indicates the currently selected image.
- Dark gray bars represent images that have not yet loaded (only appears during loading).

You can use the position indicator to locate the images that are currently being displayed within the loaded series.

The position of the slider on the scroll bar also indicates the position of the images displayed, but not as precisely.

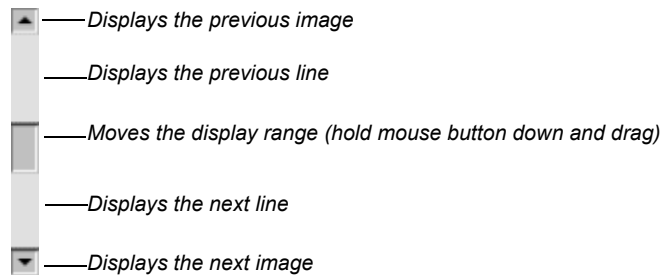
## Image by image - slow scrolling

To scroll through the loaded images you can use:

- the *Scroll bar*
- the *Keyboard*
- the *Wheel mouse*
- the *Icons on the toolbar*

### ***Scroll bar***

Click into the scroll bar with the mouse.



### ***Keyboard***

Press one of these keys.



Jumps to the beginning of the loaded series.



Jumps to the end of the loaded series.



Scrolls back one image.



Scrolls forward one image.



Scrolls back one line.



Scrolls forward one line.



Scrolls back one page.



Scrolls forward one page.

---

## ***Wheel mouse***



Turn the wheel toward you to scroll forward.

-Or-

Turn the wheel away from you to scroll backward.

The faster you turn the wheel, the faster you scroll.

## ***Icons on the toolbar***

You can also load the previous or next patient, study, or series right from a viewer window.

### **Switching between patients**



Click the **Previous Patient** or **Next Patient** icon on the toolbar of the viewer.

The images of the previous or next patient are displayed.

### **Switching between studies**



If more than one study is stored on the web server for this patient:

Click the **Previous Study** or **Next Study** icon on the toolbar of the viewer.

The previous or next study of the same patient is loaded and displayed.

### **Switching between series**



If the current study contains more than one series:

Click the **Previous Series** or **Next Series** icon on the toolbar of the viewer.

The previous or next series of the same study is displayed.

If you have loaded all series of your study as one viewing series (i.e. with the icon **Select all series as one** in the study/series window clicked) series by series scrolling is not possible in the viewer.

### **Next/Previous Annotated Image**



If measurement graphics or annotations had been saved in some of the loaded images you can use these icons to advance from one annotated image to the next.

Click the **Previous Annotated Image** or **Next Annotated Image** icon on the toolbar of the viewer.

## Scrolling in compare mode

If you have loaded two series in compare mode you can scroll through their images simultaneously.

### Synchronizing the starting point

Select the same layout in both halves of the screen (for example, layout 1x1).

Use the scroll bar or the wheel mouse in both halves to synchronize the starting points of the two series with each other.

### Scrolling in both window sections

Use the following arrow keys to scroll in both window halves:



Both series one image back



Both series one image forward



Both series one line forward



Both series one line back



Both series one page forward (by the number of images displayed)



Both series one page back (by the number of images displayed)



Both series to the beginning of the series.



Both series to the end of the series

If different layouts are set in the two halves of the screen, the images will be scrolled by a different number of images when scrolling page by page.

## Cine mode - fast scrolling

Cine mode allows you to view selected images or series continuously.

In this dynamic display mode, the images are displayed precisely as edited before the function was started. For example, if an image was zoomed beforehand, this image will also be displayed zoomed in dynamic display mode.

Cine mode always switches to layout 1x1 to play back the scenes or series.

Visage 7 Web Client provides two alternatives for dynamic display:

- *Automatic cine mode*
- *Interactive cine mode*

#### Note

Note that automatic cine mode may result in a loss of image quality. Choose interactive cine mode instead, if you observe reduced image quality in automatic cine mode.

### Automatic cine mode

- ▶ 1. Click the **Cine Mode Forward** icon to run the movie forward (i.e. from the beginning of the series to the end).

Playback may be slower at the beginning while images are still being loaded.

-Or-

- ◀ Click **Cine Mode Backward** to run the movie backward.



2. Use the slider to adjust the playback speed and direction.

The number next to the slider indicates the playback speed in images per second.

- 3. Click **Cine Mode Stop** to stop the movie.



4. Click the **Bouncing Cine** icon to run the movie back and forth.

Every time the movie reaches the last image of the series, it runs back to the first image, then forward to the last image again, etc.

#### Tip

Your system administrator can define whether or not cine mode is started automatically for images of certain modalities.

#### Tip

You can window, zoom, pan, or apply other image editing functions while automatic cine mode is being played back.

### ***Interactive cine mode***

This mode lets you control the playback rate and direction interactively with the mouse.



1. Click the **Interactive Cine Mode** icon.

2. Click the image and hold the mouse button down.

3. Drag the mouse:

**fast (slowly) up** - the film runs fast (slowly) forward

**fast (slowly) down** - the film runs fast (slowly) backward

-Or- (depending on the configuration)

**fast (slowly) right** - the film runs fast (slowly) forward

**fast (slowly) left** - the film runs fast (slowly) backward

-Or-

Turn the mouse wheel:

**fast (slowly) up** - the film runs fast (slowly) forward

**fast (slowly) down** - the film runs fast (slowly) backward

#### **Tip**

Talk to your system administrator if you prefer up/down rather than left/right mouse movement or vice versa in interactive cine mode.

## **Viewing presentation state images**

If your hospital works with presentation states Visage 7 Web Client can show these images in addition to the original series.

Presentation state images are shown with all display settings and evaluation results that were active and visible when the presentation state object was created at a diagnostic workstation. A few restrictions do, however, exist for presentation state images in the Visage 7 Web Client viewers:

- Presentation states are only supported for single frame images or multiframe images with only one frame.
- Images referenced in a presentation state cannot be displayed by Visage 7 Web Client if they were compressed lossily and with matrix reduction.

- Only graphical overlays (type *G*, 60xx,0040) can be displayed. Overlays of type *R* (ROIs) cannot be shown. Moreover, if overlays that are encoded in an image exceed the size of the underlying DICOM image they are clipped to the size of the underlying image.
- Only curve data of type *ECG*, *POLY* and *ROI* (50xx,0020) can be shown. Moreover, the *Curve Data Value Representation* (50xx,0103) must be 0x0000 (unsigned short) and the *Axis Units* (50xx,0030) must be PIXL/PIXL.

Once you have loaded presentation state images into a viewer you can:

### Slow scrolling

Scroll through the images of one series in the current presentation state image by image.

- *Image by image - slow scrolling*

#### Note

Cine mode is not possible for presentation state images.

### Next/previous presentation state



1. Use these icons in the viewer toolbar to show the images of the next/previous presentation state of your study.

The icons are dimmed if only one presentation state is available for the current study.

### Next/previous study or patient

Scroll on to the presentation states of the next study or patient (if you have filtered the patient list by modality PR).

- *Switching between patients*
- *Switching between studies*

### Presentation state mode on/off



1. Use the **Hide/Show Presentation State** icon in the viewer toolbar for this.

### Edit and evaluate images

Manipulate or evaluate presentation state images in just the same way as you handle original series images.

- *Editing images*
- *Evaluating images*

**Note**

Note that an icon appears in the upper right-hand corner of a presentation state image when you manipulate the image display. This warns you that the image is no longer displayed as stored in the presentation state.

## Viewing angio scenes

Angiographic image data differ in a number of ways from the images of other modalities. Visage 7 Web Client therefore provides a series of special representation methods for such images.

These options become active whenever you load XA scenes into one of the Visage 7 Web Client image viewers.

**Note**

Other modalities besides XA also provide multiframe images, e.g. ultrasound (US). However, these angio-specific functions are only available if you have loaded XA data.

## Playing back angio scenes

Angiographic scenes record dynamic information, that is, they display a process over time. An angio scene is therefore always automatically played back in cine mode (layout 1x1) whenever you load an angio scene and switch over to the respective viewer.

In cine mode, scenes are played back in a loop. When they reach the last frame they start again from the beginning until you stop the playback manually.

### *Stopping and restarting a scene*



1. Click **Cine Mode Stop** to stop playback.

The scene stops at the image last displayed, which you can then edit.



2. Click **Cine Mode Forward** to restart the scene.





3. Use the slider to adjust the playback speed and direction.

The number next to the slider indicates the playback speed in frames per second.

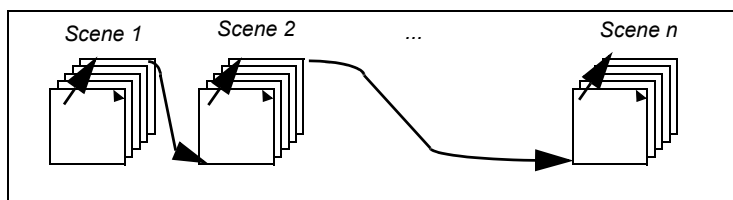
### ***Playing back an entire examination***

You can play back all the scenes (multiframes) of an examination one after the other, beginning with the scene currently displayed and running through to the end of the examination. To be able to do so you must have loaded the entire study into the viewer.



Click **Loop All**.

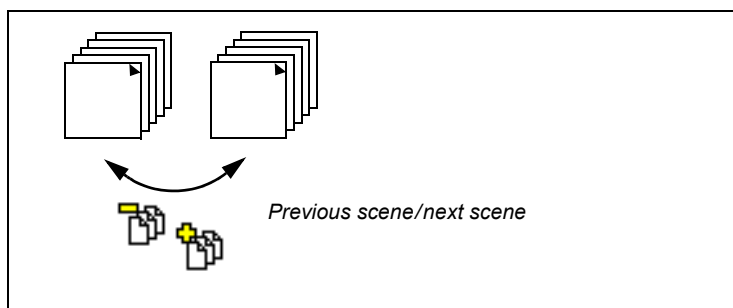
All scenes are played back like a movie.



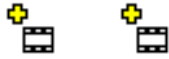
### ***Scrolling scene by scene***



Click **Next Series** or **Previous Series** to scroll to the next or previous scene.



## Scrolling frame by frame



Click **Next Image** or **Previous Image** to display the next/previous image of the scene.

If dynamic image display was active, it is stopped.

-Or-



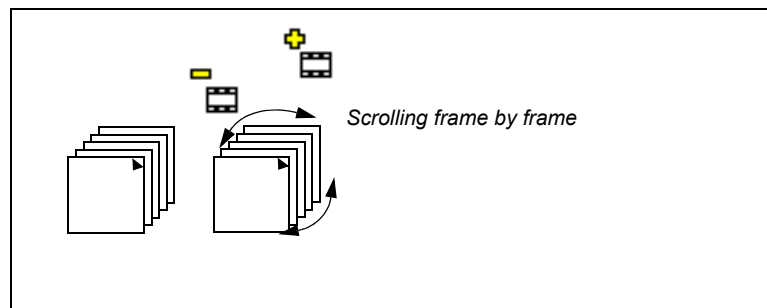
Click **Stop Cine Mode** to stop playback and then scroll frame by frame with the wheel mouse.

-Or-



Click **Interactive Cine Mode**, hold the left mouse button down and move the mouse slowly over the image.

Your progress within a scene is indicated by the position indicator bar at the bottom edge of the viewer window.



## Displaying biplane scenes

Angio scenes may have been recorded in the so-called biplane mode. This means that two scenes are recorded simultaneously during a recording sequence, showing the same region, but with a different orientation. The image pairs (frame 1 in plane A and frame 1 in plane B, for example) have the same time stamp.

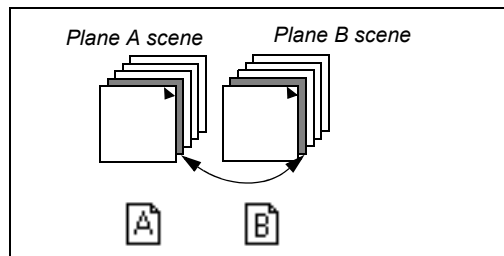
You can switch back and forth between these two planes while a biplane scene is being displayed. Switching planes means looking at the same area of interest at the same time, but from a different direction.

Information relating to biplane images is displayed in image preview. You can recognize a biplane scene in the image preview of the study/series window or in the preview window by the reduced spacing between the plane A and plane B thumbnails.



Click the **Plane A** and **Plane B** icons to toggle between the frames of a biplane scene.

This allows you to view the same region at the same instant, but from different viewing angles.



#### Tip

If you want to compare two planes with each other, load the scene once in viewer 1 and once in viewer 2. Switch to compare mode and display plane A in one half of the screen and plane B in the other.

## Viewing report/photofile images

An angio series may contain one or more scenes (dynamic multiframe images) as well as a number of report or photofile images.

So-called report images are single images, which may contain evaluation information from one of various programs.

In image preview, these report/photofile images are displayed next to the corresponding multiframe series.

#### Note

Do not confuse report images with study reports.

Report (or photofile) images are single XA images created by an evaluation program. You can toggle between report image and scene display when XA data are loaded into one of the viewer windows that contain reports/photofiles.

Study reports are text files sent from the HIS/RIS which contain study results and findings. You use the Visage 7 Web Client report windows to display a study report.

### Displaying report images



Click the **Display Reports** icon.

Instead of the scene, the attached report images are displayed.

### Returning to scene display



Click the **Display Scenes** icon to return to the scene display.

## Displaying the ECG

Cardiological scenes from the XA modality may contain ECG information. If this is the case the ECG can be shown in the lower left-hand corner of the screen. A pink line in the ECG shows you in which cardiac phase the current frame was acquired.

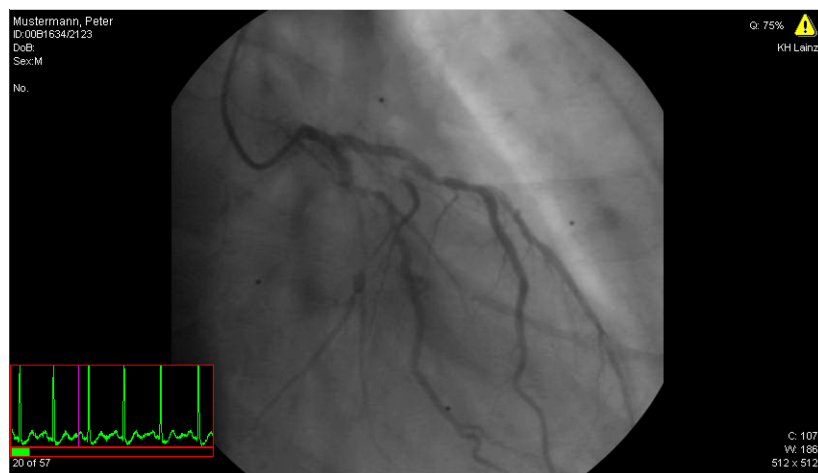
### Showing the ECG

1. Select **Hide/Show ECG** from the popup menu.

The menu item is only shown in the popup menu if ECG data are available for this scene.

2. Start cine mode.

The scene is being played back while the pink line moves along the ECG in the lower left-hand corner of the screen.



3. Halt cine mode to focus on a frame.

**Scrolling images**

1. Click on the pink line in the ECG, which indicates the current image.
2. Hold the mouse button down and drag the pink line to the right or left to scroll through the frames of the scene.

**Hiding the ECG**

Select **Hide/Show ECG** from the popup menu a second time to hide the ECG again.

## Displaying scoutlines

Visage 7 Web Client supports the display of scoutlines in CT or MR series

- that were acquired with a reference image, or
- in two series of the same region that were scanned with a different orientation.

A reference image (also called topogram, scout, or localizer, depending on the modality and acquisition system) is a low-resolution image that is used for planning the scan range. Showing scoutlines in a reference image helps you identify the exact location of slice images.

If two series of the same region were scanned with a different orientation (e.g. sagittal and coronal) you can use scoutlines to show the location of the images of the two series with reference to each other.

**Prerequisites**

In order to be able to show scoutlines your image data must fulfill the following preconditions:



- The images have been loaded into compare mode.  
Scoutlines cannot be displayed if you are working in the viewer 1, viewer 2, or report with image window.
- CT or MR series are displayed.
- The images loaded in both screen halves originate from the same study.
- The images loaded in one screen half correlate anatomically to the image(s) shown in the other screen half.

## Showing scoutlines in a reference image



1. Load the reference image in viewer 1, and one or several series in viewer 2 (or vice versa).
2. Display both viewers side by side (compare mode).

3. Select an image from your series by clicking it.

The image is highlighted by a white border.

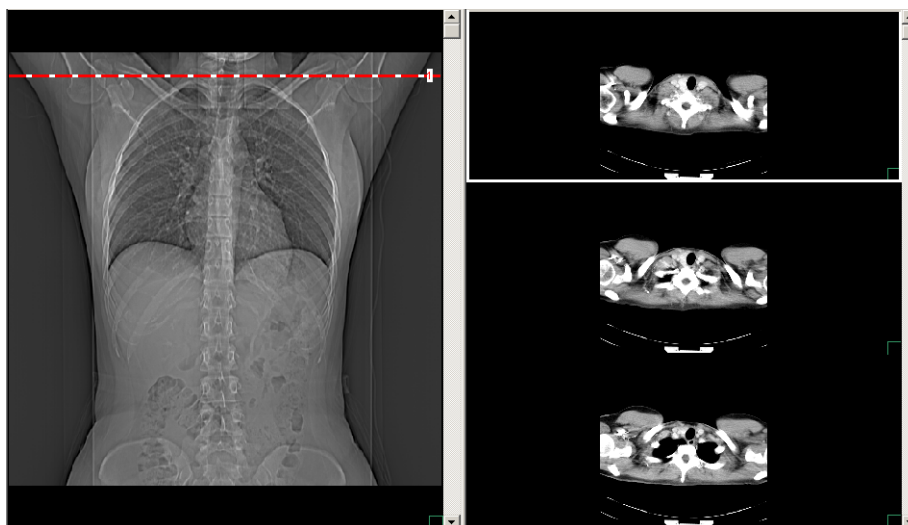
4. Drop down the **Show Scoutlines** icon bar in the reference image section, and select one of these options:



Select **Show Current Scoutline** to show where the currently selected image cross-sections the reference image.

When you scroll through your series now, the scoutline moves up or down in the reference image. It will always show you the exact location of the selected scan.

The image number of the selected scan is indicated next to the scoutline.



-Or-



Select **Show All Scoutlines** to display the scoutlines of all loaded images (assuming that all loaded images fall within the scan range of the reference image).



Select **Show Border Scoutlines** to display the scoutlines of the first and last scan in the reference image.



Select **Show Border and Current Scoutlines** to display the scoutline of the currently selected image as well as the scoutlines of the first and last image.

### Hiding scoutlines








Click the **Show Scoutline** icon a second time to hide scoutlines again.

## Printing reference image and scan series with scoutlines




You can use compare mode and scoutline display for printing the images of a series or study in a way that gives you a particularly clear overview.

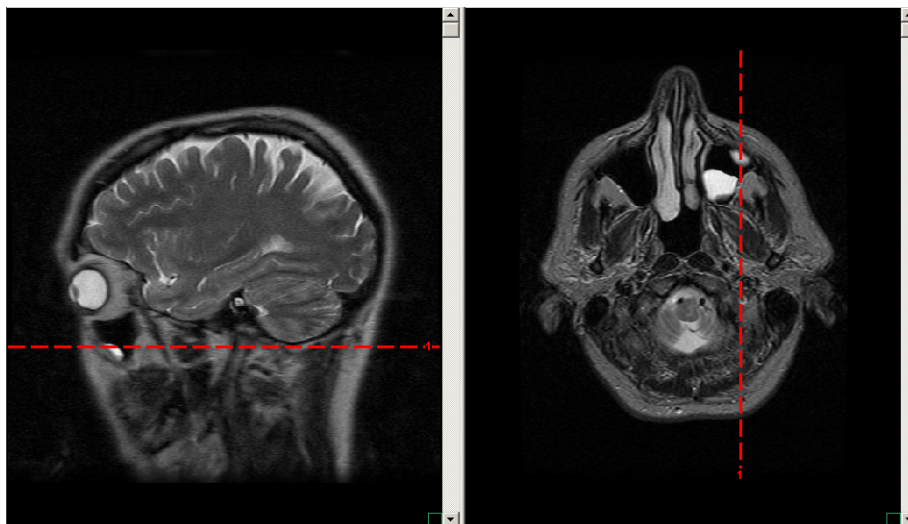
### Note

Note that a DICOM printer must be connected to your system and the DICOM print function must have been enabled so that you can print images with scoutlines as described here.

- ▶ **1** 1. Load the reference image in viewer 1.
- ▶ **2** 2. Load a series of the same study in viewer 2.
-  3. Display both viewers side by side (compare mode).
-  4. **Show All Scoutlines** in the localizer (viewer 1).
-  5. Select the reference image for DICOM print in viewer 1.  
-And-
-  6. Select all images for DICOM print in viewer 2.  
See also *Selecting images for DICOM print* on page 192.
-  7. Select the **DICOM Print** icon from the **viewer 1 toolbar**.  
This ensures that the reference image will be printed first.
8. Select print settings in the **DICOM Print** dialog box and start the printout.  
See also *Print preview and starting the printout* on page 193.

## Showing scoutlines in slice images

- ▶ **1**    ▶ **2** 1. Load one series in viewer 1, and the other in viewer 2.
-      2. Display both viewers side by side (compare mode).
-  3. Select **Show Current Scoutline** in both screen halves, for example.  
When you scroll through one of your two series now, the scoutlines will follow your scrolling in the other screen half.



### Hiding scoutlines



Click the **Show Scoutline** icon a second time in one or both screen halves to hide scoutlines again.

## Editing images

Once you have loaded all images and series you wish to review into one of the Visage 7 Web Client viewers you can process individual images or apply these changes to all images at once.

### Note

All changes you make only apply temporarily for the current session. You cannot save these changes back to the database on the web server.

These image processing options are available in Visage 7 Web Client:

- *Zooming and panning images*
- *Windowing and filtering images*
- *Rotating, flipping, and inverting images*

Immediately after loading, one tool for image editing is already selected. Your system administrator can assign a default editing tool to each modality.



## Selecting and editing images (general procedure)

As a rule, all image processing functions only affect the currently selected image (recognizable by the light-colored frame).

However, you can easily apply all changes you have made in one image to all other images of the current series as well.

### Tip

If you edit a multiframe all changes immediately affect all frames even if cine mode has been stopped.

---

### *Selecting an image*

One image is always selected. This is usually the first image of a loaded series or study, unless you have already scrolled through the images or explicitly clicked on another image.

Click on an image with the left mouse button to select it.

The selected image is highlighted with a light-colored frame.

You can now window, filter, zoom, pan, magnify, rotate, flip, or invert the gray-scales of this image.

### *Applying changes to all images*

As a rule all image editing steps, such as windowing, filtering, zooming, apply to the selected image alone. However, you can easily apply your changes to all other images of a loaded series as well.

Use **Apply to All** from the popup menu in the image to apply the last editing step to all other images of a loaded series.

-Or-

Select **Auto Apply to All** in the popup menu *before* you start editing an image (this menu item is usually selected by default).

All changes you make from now on apply to all loaded images immediately.

### Tip

**Apply to All** and **Auto Apply to All** affect only those images that are already loaded. You should therefore wait until all images of a series to be processed are loaded before you activate these functions.

---

## ***Undoing changes***

You can always undo the last processing step:

1. Place the cursor over the image area.
2. Click the right mouse button to pop up a context menu.
3. Select **Undo**.

## **Zooming and panning images**

You can zoom in on sections of an image which are of particular interest to you. If the enlarged image is too large to be displayed in the segment, you can pan it (i.e., move it) so that the region of interest is in the center of the image again. If overlay graphics or shutters are included in the image that you want to zoom or pan, they are adapted accordingly.

### **Note**

If you apply any of the zoom functions to layouts other than 1x1, zooming is not automatically synchronized. I.e. the images in the separate segments are not shown with the same zoom factor initially.

## ***Temporarily zooming in on details***

With **Quick Zoom** you can temporarily zoom in on an image in order to study details. When you release the mouse button, the image will be displayed in its original size again. You can apply the **Quick Zoom** function to any layout.



1. Click this icon.

-Or-

Select **Quick Zoom** from the popup menu.



The mouse pointer changes shape in the image area.

2. Left-click the relevant portion of the image.

The starting point of the mouse pointer is the center of the enlargement.

3. Hold the mouse button down and drag the mouse pointer:

**up** - to enlarge the image,  
**down** - to reduce the image.

When you release the mouse button again, the image snaps back to its original size.

### ***Displaying an image in enlarged/reduced size***

By zooming in on an image you focus on details. Zooming back out again will give you a better overview of the situation.



1. Click this icon.

-Or-

Select **Zoom** from the popup menu.



The mouse pointer changes shape in the image area. The starting point of the mouse pointer is the center of the enlargement.

2. Left-click and drag the mouse pointer over the image:

**up** - to enlarge the image,

**down** - to reduce the image.

When you release the mouse button, the image will keep its new size.

The **Zoom** tool remains active until you select another editing tool from the tool-bar or popup menu.

### ***Panning an image***

After you have zoomed an image, parts of it might extend beyond the edge of the image segment.

You might therefore want to pan the image after zooming so that the region of interest is in the center of the segment again.



1. Click this icon.



The mouse pointer changes shape in the image area.

2. Left-click and drag the image.

### ***Adjusting the image size***

In addition to zooming and panning manually using the mouse, you can also use predefined settings to adjust the image size quickly.

#### **Fitting an image into a segment**

In order to make optimum use of the image segment:



Click this icon.

-Or-

Select **Fit to segment** from the popup menu.

The image is enlarged or reduced in such a way that it fits exactly into the segment.

### Return to original size



Click this icon.

-Or-

Select **Original Size** from the popup menu.

The image will be displayed in its original size (acquisition matrix).

### ***Magnifying portions of an image***

The magnifying glass function provides you with a fast way of looking at details more closely without zooming the entire image.



1. Click this icon.

-Or-

Select **Magnifying Glass** from the popup menu.

The mouse pointer changes shape in the image area.

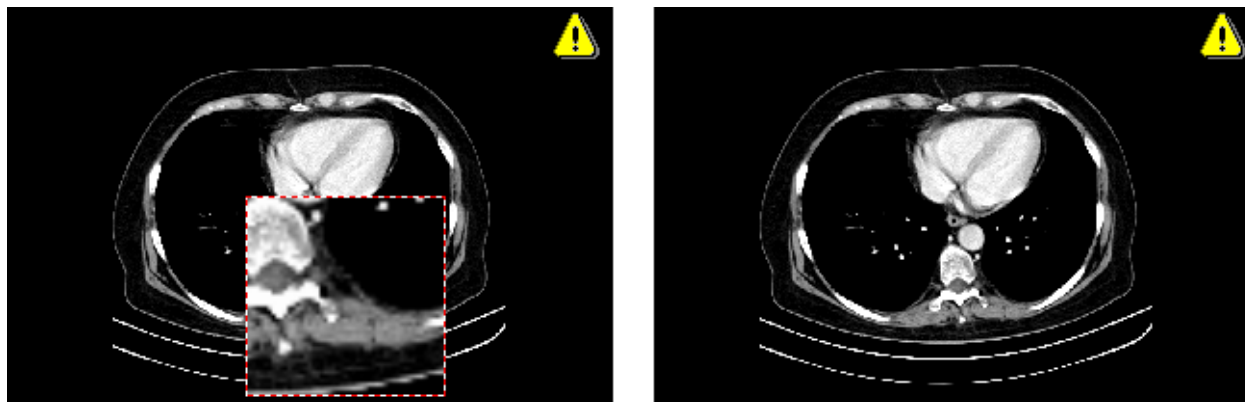


2. Left-click on the portion of the image that interests you and hold the mouse button down.

A rectangular area is displayed magnified by a factor of 2.

By keeping the left mouse button pressed and moving it over the image you can focus on details as you would if you were holding a magnifying glass in your hand.

When you release the mouse button again, the image will return to its original size.



*Left: magnifying glass on, right: magnifying glass off*

## Windowing and filtering images

With Visage 7 Web Client you can modify the brightness and contrast of grayscale images. You can also filter XA images and improve their focus.

You can window and filter images either interactively (with the mouse) or by using predefined window values.

### Note

You cannot window 8-bit ultrasound (US) images and nuclear (NM) images (e.g. RGB color images).

### *The concept of windowing*

Imaging systems provide diagnostic information in the form of grayscale images with up to several thousand different grayscale values. However, monitors cannot display such fine grayscale graduations, nor can human beings perceive them.

Windowing means focusing on the range of grayscales of the diagnostically relevant area and tissue type.

The first step in windowing is therefore to determine the center of the window, i.e., the grayscale value of the type of tissue that is central to your diagnostic problem. The smaller the window center, the brighter the image.

With the window width, you define how many grayscale values above and below the center value you want to see. The smaller the window width, the stronger the contrast.

**Tip**

You can see the current window values in the bottom right-hand corner of the images: **C** = center (brightness), **W** = width (contrast).

Medical images are already stored with window settings on the modality. However, you can change these window levels when you view images.

The Visage 7 Web Client viewers provide various functions for doing that.

***The edge enhancement filter***

The edge enhancement filter is used for optimizing image quality and increasing contrast between structures.

**Tip**

The edge enhancement filter is especially useful for improving the sharpness or definition of XA images.

Therefore the filter value is displayed in the bottom right-hand corner of XA images, below the window values.

***Windowing with the mouse***

You can use the mouse to change the way in which the grayscales (brightness and contrast) of an image are displayed.



1. Click this icon on the toolbar.

-Or-

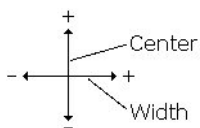
Select **Windowing** from the popup menu.



The mouse pointer changes shape in the image area.

2. Left-click and drag the mouse pointer over the image:

**up/down** - to change the **center**, making the image brighter or darker,  
**right/left** - to change the **width**, increasing or decreasing image contrast.



## ***Filtering images***

You can use the mouse to emphasize or soften the edges in an image.



1. Click this icon on the toolbar.



The mouse pointer changes shape in the image area.

2. Left-click and drag the mouse pointer over the image.

**up** - to sharpen the image,  
**down** - to soften the image.

## ***Resetting window and filter values***

You can reset window and filter values at any time to the values the images had before you started editing.



Click this icon on the toolbar to reset your changes to window values and the filter value.

The window and filter values with which the images were originally loaded are applied again.

### **Tip**

Select **Apply to All** in the context menu, if you wish to reset the window/filter values of the entire series.

## ***Using preset window and filter values***

A series of organ-specific and user-specific window and filter settings are stored in Visage 7 Web Client. Some of these settings were predefined during the installation of the Visage 7 server, others have been defined by a user.

You can apply these presets to images of a particular modality.

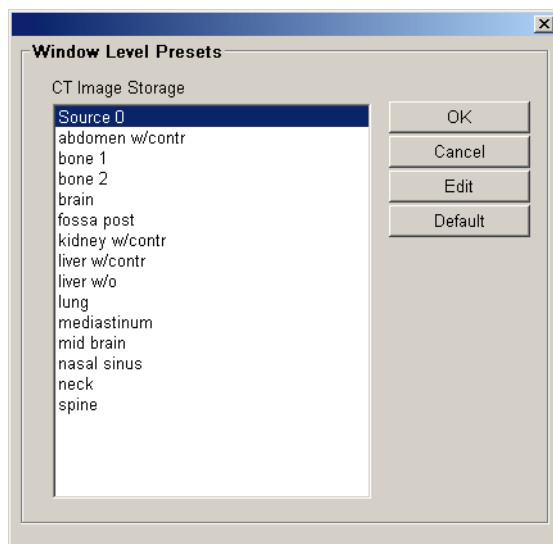


1. Click this icon on the toolbar.

-Or-

Select **Window Level Presets > Window Level Presets** from the popup menu.

The **Window Level Presets** dialog box opens.



2. Select a user-defined preset.

-Or-

Click **Default** to return to the settings with which you loaded the images.

#### Tip

The window and filter settings stored together with the images in the Visage 7 database on the web server are labeled “Source 0”. For imaging methods (e.g. CT) which allow storage of two alternative window settings together with images, the two sets are labeled “Source 0” and “Source 1”.

### ***Defining new window/filter presets***

After you have windowed or filtered an image you can save these window/filter settings as a preset.

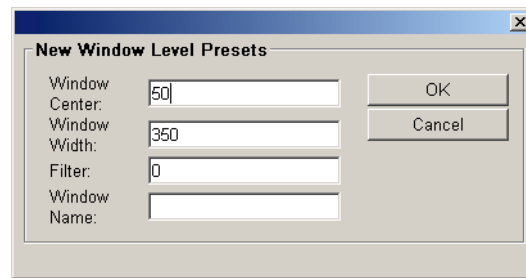


1. Use the mouse to window (and filter) the currently selected image.
2. Select **Window Level Presets > New Window Level Presets** from the popup menu.

The **New Window Level Presets** dialog box opens.

The window center and width value of the current image and filter settings are displayed.





3. Enter a unique name.
4. Click **OK**.

### ***Modifying or deleting preset window/filter values***

You can modify or delete user-defined window and filter presets at any time.

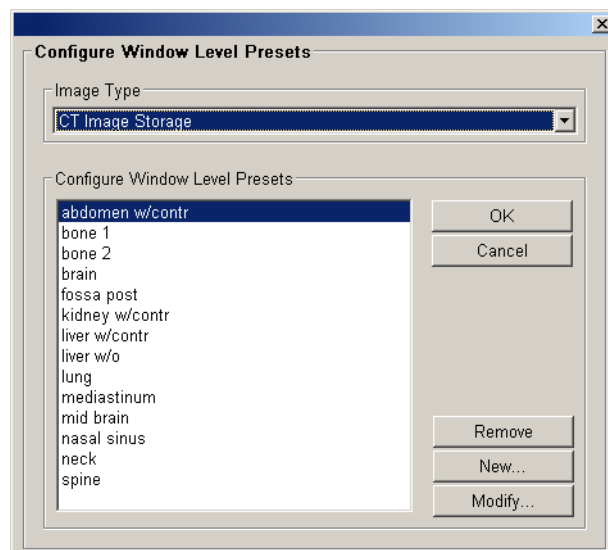
#### **Note**

You cannot modify or delete presets that were defined during the installation of the web server.

#### **Opening the dialog box**



1. Click the **Window Level Presets** icon.  
The **Window Level Presets** dialog box opens. The list displays all presets available for the current modality and image type.
2. Select a preset and click **Edit**.  
The **Configure Window Level Presets** dialog box opens. This dialog box lists all window and filter presets by modality.

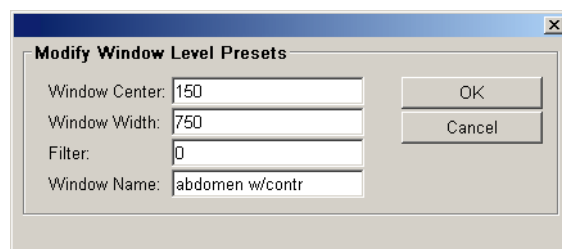


### Modifying a preset

In order to modify a preset:

1. Select a modality and image type.
2. Select the preset you want to change from the **Preset Window Values** list.
3. Click **Modify**.

The **Modify Window Level Presets** dialog box appears.



4. Change the **Window Center** (brightness), **Window Width** (contrast) or **Filter** value.
5. Change the name as well, if necessary.
6. Click **OK**.

The **Modify Window Level Presets** dialog box is closed. You are now in the **Configure Window Level Presets** dialog box again.

7. Click **OK**.

The **Configure Window Level Presets** dialog box is closed and you return to the **Window Level Presets** window. Also close this dialog box with **OK**.

**Deleting a preset**

In order to delete a preset:

1. In the **Configure Window Level Presets** dialog box, select a modality and image type.
2. Select the preset you want to delete.
3. Click on the **Remove** button.  
The preset is removed from the list.
4. Click **OK** to close the **Configure Window Level Presets** dialog box.  
Finally, click **OK** to close the **Window Level Presets** dialog box.

**Note**

You can only delete user-defined window level presets but not the presets "Source 0" and "Source 1".

## Rotating, flipping, and inverting images

You can optimize the way you display digital images. For example, you can rotate the images around an axis. You can flip images horizontally, or you can invert the grayscale values of images. If overlay graphics or shutters are included in the image that you want to rotate or mirror, they are adapted accordingly.

These functions are useful for comparing series acquired with different patient positions or scan direction.

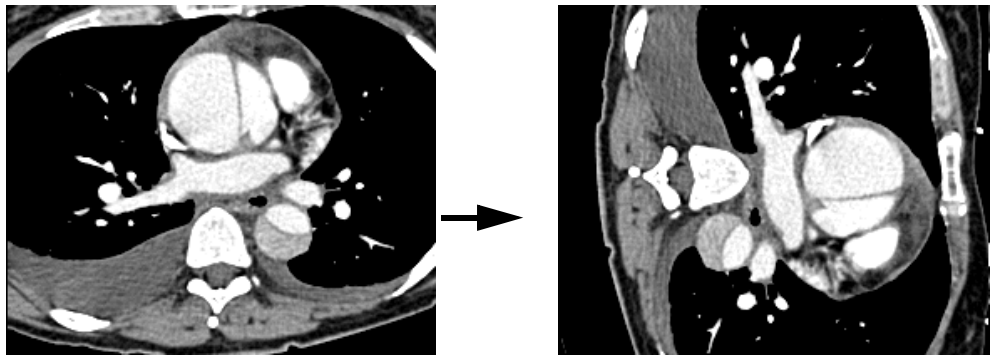
### *Rotating images*

You can rotate images clockwise in 90° steps. The center of rotation is always the center of the segment.

You cannot rotate XA scenes.



1. Click this icon on the toolbar.  
The image is rotated 90° clockwise.
2. Click the icon again to rotate the image another 90°.  
The image orientation labels H/F, R/L, and A/P change accordingly.



### ***Flipping images***

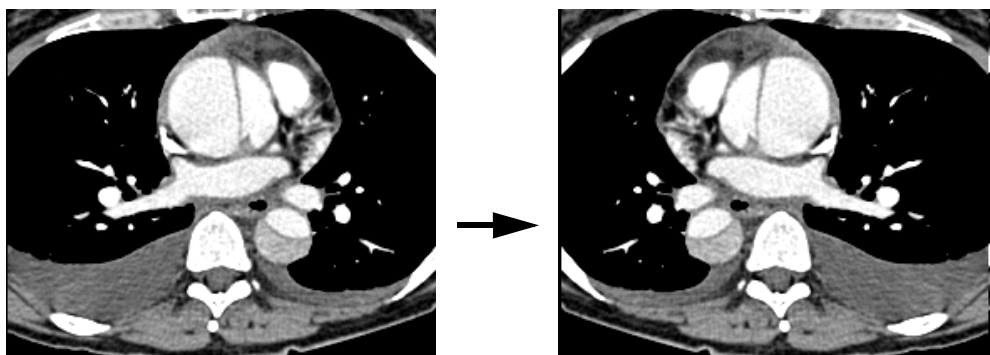
With the flip or mirror function, you can compare images of series that were acquired with a different patient position or scan direction more easily.

You cannot flip XA scenes.



Click the **Mirror** icon on the toolbar.

The image is rotated round its vertical axis. The orientation labels are changed accordingly.

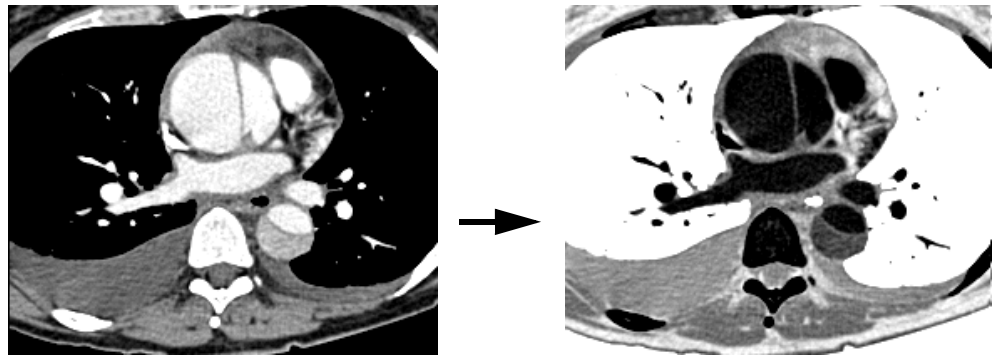


### ***Inverting images***

When an image has been inverted, light areas are displayed dark and dark areas light.



Click this icon on the toolbar.



## Evaluating images

Visage 7 Web Client provides a number of tools for the evaluation of image information.

These tools support you with:

- *Measuring distances and angles*
- *ROI evaluation*
- *Density measurements*

## Measuring distances and angles

With Visage 7 Web Client you can measure distances and angles in images. For example you can measure the length or width of structures.

Some modalities and image types allow measurement in millimeters, whereas others provide pixel information only. For images in this last category, Visage 7 Web Client provides a calibration tool. This assumes that the images include image markers with known distances.

### Tip

If you zoom, pan, rotate, mirror, or invert images, the measurement graphics are also adjusted.

### Note

When you use measurement functions for diagnostic purposes please check the plausibility of your measurement results.

## Measuring distances

You measure a distance in an image by drawing a line between the two end points. As soon as you have finished your line, the program displays its distance in millimeters or pixels next to the line.

You may draw as many lines as you wish in an image.

### Caution

The accuracy of distance measurements is  $\pm 2$  pixels. Larger errors can occur if the image is displayed with reduced matrix size, that is if not every original pixel is shown on the screen due to zoom-out. For optimum accuracy we recommend zooming into the structure of interest as much as possible. The accuracy is further limited by the physical resolution of the acquisition itself. If the monitor used for display does not permit exact pixel selection, the inaccuracy can be greater still.



1. Drop down the **Measurement Functions** icon bar and keep the mouse button pressed.



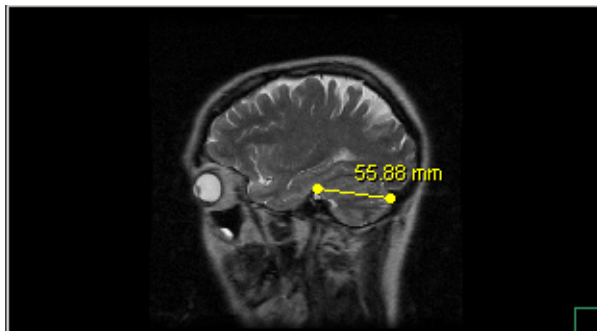
2. Select the **Distance Measurement** icon.



The mouse pointer changes shape in the image area.

3. Click the starting point of the distance line.
4. Hold the mouse button down and drag a line over the image.
5. Release the mouse button when you reach the required end point.

When you release the mouse button, a line appears showing the length in exact millimeters (**mm**, in CT or MR images), estimated millimeters (**mm[?]**) or pixels (**pix**), if the image data do not allow calculation in millimeters.



**Tip**

Calculation of distances in exact millimeters requires that the image data come with exact distance information in a specific DICOM tag (Pixel Spacing). Only CT and MR images come with this DICOM tag. Therefore indication of distances in exact millimeters is only possible in images of these modalities.

Images from other modalities, such as the XA modality for example, usually come with DICOM information that allows a very close estimation of millimeters. Distance measurements in images from these modalities are therefore usually indicated in estimated millimeters (mm[?]).

Images of all other modalities allow no calculation or estimation of distances in millimeters. Distance measurements in those image types are therefore indicated in pixels (pix) unless you calibrate the measurement function.

***Calibrating distances***

The user must decide whether calibration is necessary on the basis of the information provided in the image.

Several modalities and image types have already been calibrated and allow measurement of distances directly in millimeters. The precision of these measurements depends on the precision of the modality and is documented in the modality's user information.

For other modalities Visage 7 Web Client allows calculation of distances in the images of a series, even if the modality or the image provides this information in pixels only.

In such image types users can perform calibration themselves using image markers with known distances, such as a steel ruler or a steel ball in one image of a series. It is the responsibility of the user to select suitable means to create such image markers.

**Note**

Calibration is only valid for the images of the current series. It is only one option for translating a distance, which the user draws in an image and which is indicated in pixels, into SI units.

The relation between pixels and SI units is solely defined by the user. It is the user's responsibility to provide an appropriate reference in the image and to use it for performing calibration.

**Calibrating**

1. Drop down the **Measurement Functions** icon bar keeping the mouse button pressed.

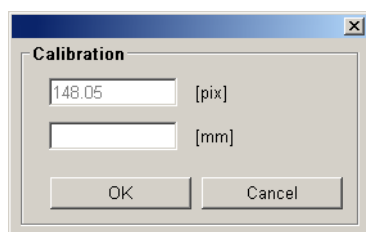


2. Select the **Calibrate Distance** icon.



The mouse pointer changes shape in the image area.

3. Click on the first point.
  4. Hold the mouse button down and drag a line to the second point.
  5. Release the mouse button as soon as you have reached the second point.
- As soon as you release the mouse button, the **Calibration** dialog box opens.



6. Enter the known distance between the points in millimeters (mm) and confirm with **OK**.



This icon in the upper right-hand corner of the image segment indicates that calibration has been applied to a distance line in this image.

### Note

The measurement and positioning precision is +/- 1 pixel for distance measurements, and another +/- 1 pixel for calibration.

The higher the relation between calibration or measurement distance and pixel length the more exact the calculation results of distances or angles will be.

### Calibration examples

Relative errors in distance measurements depend on calibration and measurements. Calibration or measurement distances of more than 100 pixels therefore have a relative calibration or measurement error smaller than 1%. The pixel size is taken from the corresponding DICOM data set, and the error percentage can accordingly be expressed in millimeters.

Angle measurements based on geometrical views where the legs of the angle are 100 or more pixels long produce a relative error of +/-1.5° (max.).

The measured values are displayed in the viewer windows, they cannot be measured manually on the monitor.

The above mentioned relative errors take into consideration measurement and calibration errors by the user of the software; for errors stemming from the imaging modalities refer to the respective user information.



## Measuring angles

You can define an angle by drawing two lines, the legs of an angle, in your image. The system then calculates the angle between the two lines in the clockwise direction and displays the result in the image next to the angle.

### Caution

The accuracy of angle measurements depends on the length of the shorter of the two angle legs. The longer the angle legs are, the better the accuracy.

For example:

Length of shorter angle leg (measurement error):

10 pixels ( $\pm 12^\circ$ ), 20 pixels ( $\pm 6^\circ$ ), 50 pixels ( $\pm 2.5^\circ$ ), 100 pixels ( $\pm 1.1^\circ$ )

Larger errors can occur if the image is displayed with reduced matrix size, that is if not every original pixel is shown on the screen due to zoom-out. For optimum accuracy we recommend zooming into the structure of interest as much as possible. The accuracy is further limited by the physical resolution of the acquisition itself. If the monitor used for display does not permit exact pixel selection, the inaccuracy can be greater still.



1. Drop down the **Measurement Functions** icon bar keeping the mouse button pressed.



2. Select the **Angle Measurement** icon.



The mouse pointer changes shape in the image area.

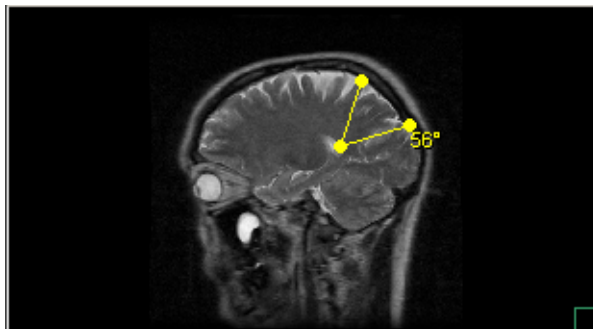
3. Click the start point of the first leg.
4. Hold the mouse button down and drag a line over the image.
5. Release the mouse button.

The first leg is drawn.

6. Draw the second leg in the same way.

The two lines you draw do not have to intersect. The program indicates where the two lines would cross with a dot while you do the drawing. The point of intersection can lie outside the image.

The angle (in degrees) will be displayed as soon as the second leg is completed.



### ***Changing, moving, or deleting measurement graphics***

You can subsequently change all measurement graphics.

#### **Deleting a measurement**

The **Delete Measurement/Annotation** menu item in the popup menu deletes the last measurement drawn in the active image area.

#### **Deleting all measurements**

The **Delete All Measurements and Annotations** menu item in the popup menu deletes all measurements drawn in an image.

#### **Changing a measurement**

1. Click a measurement.  
Grab handles appear at the ends of the line.
2. Left-click a handle at the end of a line and hold the mouse button.
3. Move the end of the distance line or leg.
4. Release the mouse button on reaching the new end point.  
The new measurement value is displayed.

#### **Panning measurement graphics**

1. Click a measurement.  
Grab handles appear at the ends of the line.
2. Left-click the line but *not* a handle and hold the mouse button down.
3. Move the whole distance line or the whole leg of an angle.  
The value remains hidden as you move the measurement. The new measurement value is shown as soon as you release the mouse button.

### **ROI evaluation**

With Visage 7 Web Client you can statistically evaluate regions of particular interest to you. To do this you define the region of interest in an image by drawing a ROI graphic. The program will then automatically calculate the following statistical information for this image area and a histogram.

- Maximum/minimum pixel value (**Min/Max**)  
Pixel values are indicated in HU (Hounsfield units) for CT images.
- Average pixel intensity value (**AVG**) in one of the above listed units.
- Standard deviation (**ms**)
- Total area covered by the ROI in square millimeters (**mm<sup>2</sup>**), estimated square millimeters (**mm[?]<sup>2</sup>**), if this information is available in the image, or pixels (**pix**).

#### Note

ROI evaluation is only possible in single frame and grayscale images. ROI evaluation also requires that images have been loaded uncompressed or with a lossless compression method.

### Drawing a ROI

#### Caution

The relative error of the elliptical or rectangular ROI measurements is  $\pm 2$  pixels/ (shorter radius or shorter side).

For example:

Shorter radius or shorter side (measurement error):

10 pixels ( $\pm 20\%$ ), 20 pixels ( $\pm 10\%$ ), 50 pixels ( $\pm 4\%$ ), 100 pixels ( $\pm 2\%$ )

Larger errors can occur if the image is displayed with reduced matrix size, that is if not every original pixel is shown on the screen due to zoom-out. For optimum accuracy we recommend zooming into the structure of interest as much as possible. The accuracy is further limited by the physical resolution of the acquisition itself. If the monitor used for display does not permit exact pixel selection, the inaccuracy can be greater still.



1. Drop down the **Measurement Functions** icon bar and keep the mouse button pressed.



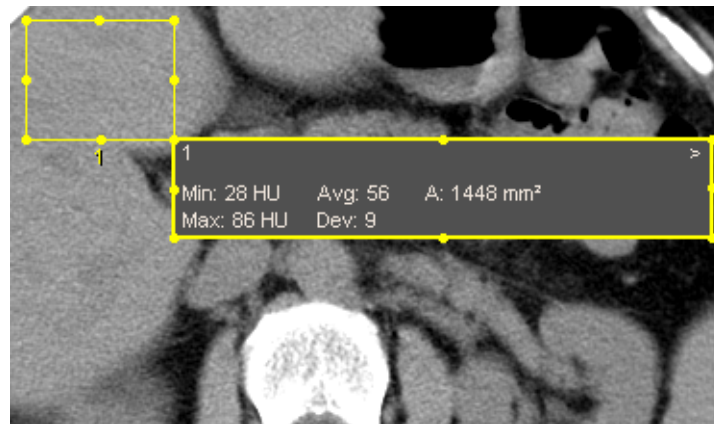
2. Select the **ROI Ellipse** or **ROI Rectangle** icon.



The mouse pointer changes shape in the image area.

3. Click at the starting point of your ROI.
4. Hold the mouse button down and drag it across the image area.
5. Release the mouse button to finish the ROI graphic.

An information box with statistical data pops up next to the ROI graphic.

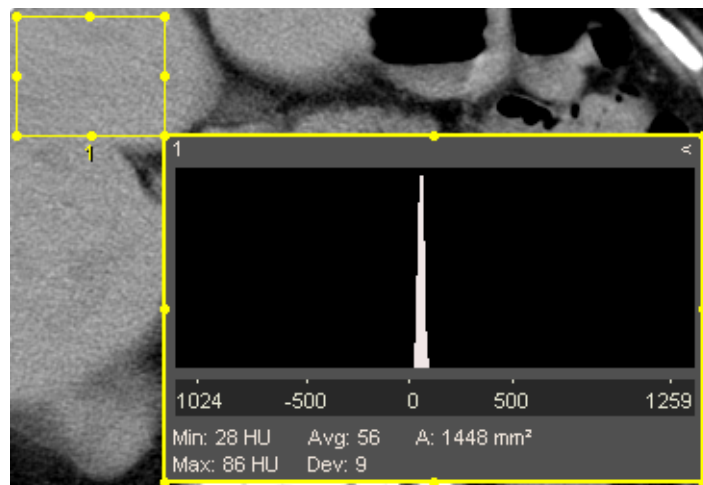


#### Tip

ROI graphics and information boxes are numbered and color coded. So if you draw more than one ROI in an image you can tell which information box belongs to which ROI graphic by the number shown in the upper left corner of the information box and by the color of the ROI graphic and info box border.

### Showing the histogram

Click on the little arrow (>) in the top right corner of the box that show the statistical values to display pixel values in a histogram.



### ***Moving or resizing ROI graphics***

If your ROI graphic does not cover the region that interests you adequately you can move or resize it.

1. Click a ROI graphic to select it.

Grab handles are now shown on the corners and along the lines of a rectangle ROI. For circular or elliptical ROIs, a bounding box with grab handles is shown.

2. Click a grab handle keeping the mouse button pressed, and move the mouse to resize the ROI.

-Or-

Click on a bounding box line (but not on a handle), keep the mouse button pressed, and drag the entire ROI across the image area.

3. Release the mouse button.

The ROI statistics are now recalculated.

## **Density measurements**

Visage 7 Web Client allows you to calculate pixel densities either along a straight line (as a density profile) or for individual pixels (with the pixel lens).

### **Note**

Density measurement is not possible on images compressed with lossy compression.

### ***Density profile***

You can calculate a density profile both in single frame and multiframe images.



1. Drop down the **Measurement Functions** icon bar and keep the mouse button pressed.



2. Select the **Density Profile** icon.

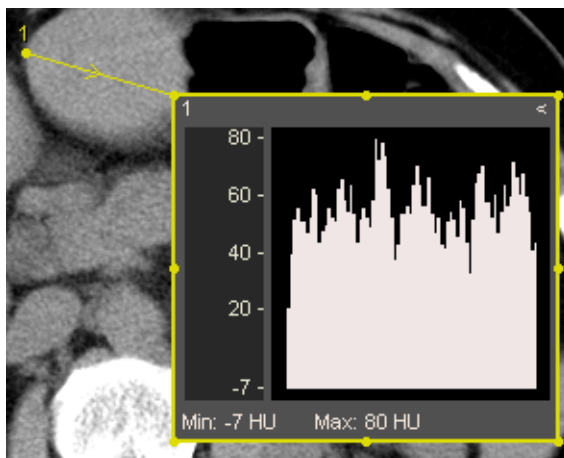


The mouse pointer changes shape in the image area.

3. Click the starting point of your line and keep the mouse button pressed.
4. Move the mouse to the end point of your line.

5. Release the mouse button.

An information box pops up at the end point of the density profile line. The info box shows the minimum and maximum pixel intensity along the line and a histogram.



**Tip**

In order to move or resize a density profile line, proceed in the same way as you would for a distance measurement.

### ***Pixel lens***

You can use the pixel lens to measure the brightness of individual pixels of gray-scale images, which is then displayed as a measure of density.

To be able to position the pixel lens precisely, the image must be displayed in **1x1** layout.

In CT images, the density is stated directly in Hounsfield units (HU).

For images transferred with lossy image compression and color images, density cannot be measured.



1. Drop down the **Measurement Functions** icon bar and keep the mouse button pressed.



2. Select the **Density Measurement** icon.



The mouse pointer changes shape in the image area.

3. Click on the position in the image whose grayscale value you want to ascertain.  
A small cross and a grayscale value (or HU value) will be displayed.

**Tip**

In order to move or delete a density measurement, proceed in a similar way as you would for a distance measurement.

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# Printing, Exporting, and Sending Images

Visage 7 Web Client allows you to print, copy, and export images, or to send data over the network for diagnostic, documentation, or presentation purposes.

This section will explain how to proceed when:

- *Printing images*
- *Exporting patient data or images*
- *Sending data in the network*

## Printing images

Two alternatives are available for printing images from a Visage 7 Web Client viewer window: DICOM print and printout on a Windows printer.

### **DICOM print**

DICOM printers are laser cameras for output of images on film, or high-resolution laser printers in your hospital's DICOM network with advanced print features.

In order to send images to a DICOM printer in your network you explicitly select the images you want to print in your viewer windows and start DICOM print from the viewer whose images you want to be printed first.

### **Windows printout**

If no DICOM printer is available or if no diagnostic output quality is required you can print out images on a local or network Windows printer. The output quality will depend to a great degree on your local client and printer hardware.

In a Windows printout all those images will be printed that are displayed on screen when you click the **Print** icon.

## Printing images on a DICOM printer

In order to be able to use this print option, connection to a DICOM printer must have been set up by your system administrator.

A DICOM printer will print images exactly as they are currently displayed in the viewer window, which includes zoom/pan or window settings as well as measurement and evaluation graphics (e.g. distance lines or ROI graphics).

**Procedure overview**

When sending images to a DICOM printer you proceed in this order:



1. Load your study or series into the viewer windows (viewer 1, viewer 2, or compare mode).



2. Explicitly select the images you intend to send to the DICOM printer in one or both viewer windows.



3. Start the printout by from the viewer whose images you want to be printed first.

**Selecting images for DICOM print**

1. Click the DICOM print selection box in the lower right-hand corner of an image segment.



A solid box indicates that this image is selected for DICOM print.

2. Click more boxes to extend your selection.

-Or-



Drop down the **Select Images** icon bar.



Click this icon to select all loaded images.

-Or-

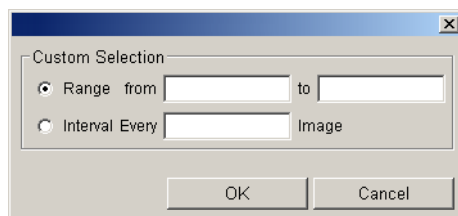


Click this icon to deselect all currently selected images.

-Or-



Click this icon to open the **Range Selection** dialog box.



Select a range of images from your currently loaded series defined as “from ... to” or “every nth image” and click **OK**.

All selected images are now marked with a solid green box in the lower right-hand corner.

### *Print preview and starting the printout*



1. Drop down the **Print** icon bar.

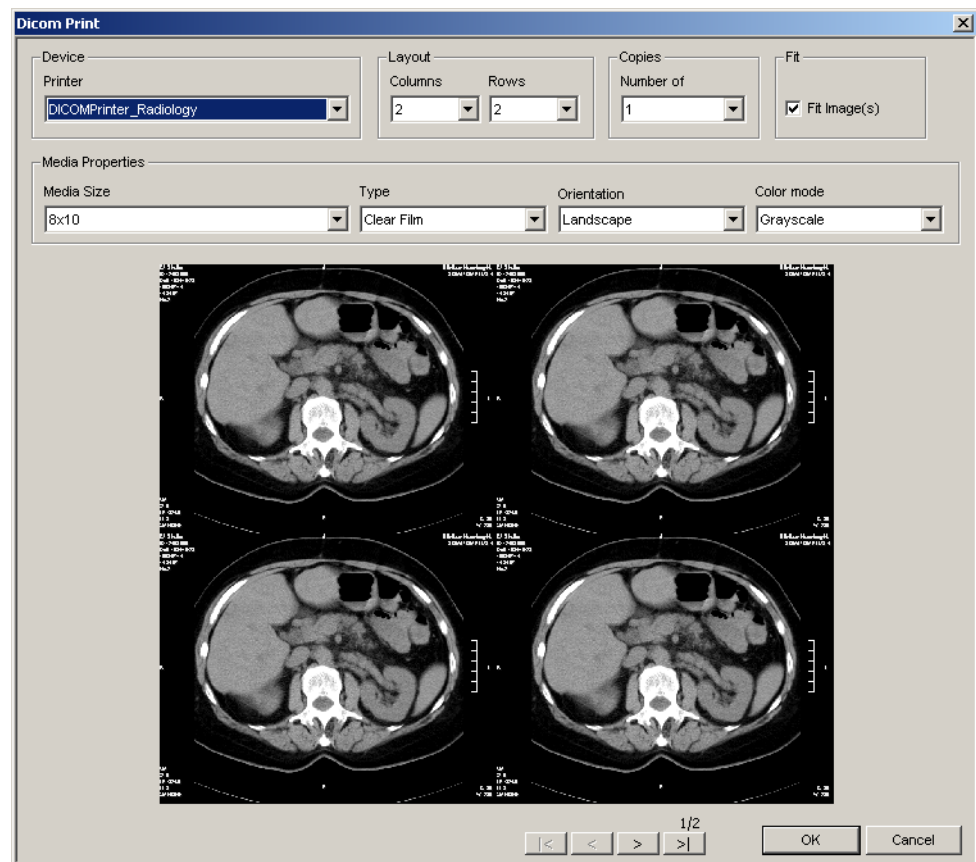


2. Select the **DICOM Print** icon.

The **Dicom Print** dialog box pops up. The dialog box shows the printer settings as well a preview of the film sheet.

#### **Tip**

Note that the image selection from the viewer in which you clicked the **DICOM print** icon will be printed first (top row(s) or first film sheet(s)).



3. Select one of the configured DICOM printers from the list.
4. Check and, if necessary, change the layout.

The print preview is updated immediately.

If more segments (rows x columns) are available than images you have selected for DICOM print, part of the film sheet will remain empty.

5. Select the number of copies, and check the **Fit Image(s)** box to make optimum use of your film segments.
6. Use the arrow keys to browse through the print preview, if you have selected more images than fit on one film sheet:
  - |< scrolls to the first film sheet/page
  - < scrolls to the previous film sheet/page
  - > scrolls to the next film sheet/page
  - >| scrolls to the last film sheet/page
7. Check, and if necessary, change other print parameters.

Your system administrator has configured the options available in the print parameter boxes for each connected DICOM printer.
8. Click **OK** to start the printout.

**Tip**

Use the **Status Information** dialog box to check whether your print job was sent off successfully (See *Checking status information*).

**Tip**

For printing reference images and scan series with scoutlines in one DICOM Print job refer to *Printing reference image and scan series with scoutlines* on page 165.

## Printing images on a Windows printer

When printing images on a local or network Windows printer we recommend that you always use the Visage 7 Web Client function, which is available through the print icon in the viewer toolbar.

That way the images are printed centered on the paper together with a header and footer. The system administrator can modify the header and footer in the administration tool of the Visage 7 server.

**Note**

You should not use the standard print function of the Internet Explorer. None of the predefined print settings made by the system administrator are available there. You yourself are responsible for ensuring adequate print quality.

A Windows printer will print images exactly as they are currently displayed in the Visage 7 Web Client viewer, which includes zoom/pan or window settings as well as measurement and evaluation graphics (e.g. distance lines or ROI graphics).

### Windows printout



1. Load your study or series into one of the viewer windows (viewer 1, for example).



2. Select a screen layout to define the number of images to be printed.

In a Windows printout only those images that are currently shown on the screen will be printed (for example one image in a 1x1 screen layout, four images in a 2x2 layout, and so on).



3. Drop down the **Print** icon bar.



4. Select the **Windows Print** icon.

Images are printed centered on paper with headers and footers.

#### Note

Because of possible loss of image quality, do not use images printed on paper for diagnostic purposes!

## Exporting patient data or images

Various alternatives exist for exporting patient and image data for different purposes.

### Patient data export

When exporting all the data of a particular patient stored on the web server you work in the patient window.

As a rule you export all studies of a patient from here in order to have them written to CD or DVD, for example by a CD/DVD producer station.

Patient data export will export the selected data from the web server database onto a predefined file directory **on the server**.

### Image data export

When you export individual images you work in one of the viewer windows.

Here you can export selected images **onto your client PC** in DICOM, bitmap, or JPEG format in order to import them into another application from here.

#### Caution

When images were saved in BMP or JPEG format they may no longer be suitable for diagnosis.

**Copy to clipboard**

You can copy images to the Windows clipboard and subsequently paste them in a presentation, or on the whiteboard in an online conference. Copy to clipboard offers a quick way of showing images from Visage 7 Web Client in a text file, for example.

When copying images to clipboard you also work from a viewer window.

**Exporting patient data from the patient list**

1. Select the patient(s) you want to export in the patient list.

If the data volume of the selected patient(s) exceeds the configured maximum data volume, the display field for data volume is dimmed.



2. Click **Export Patient** on the toolbar of the patient window.

All images of the selected patient(s) are copied to a separate directory on the server with the best image quality. A subdirectory is created there for each patient. The ID of the export order is displayed in the message box.

If your system is equipped with a CD or DVD producer station, the data will automatically be recorded on CD or DVD together with a DICOM viewer.

**Exporting images from the viewer**

1. Load your study or series into one of the viewer windows (e.g viewer 1).



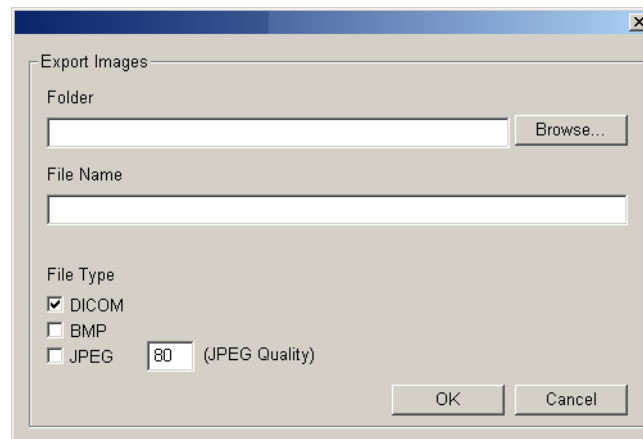
2. Select a screen layout to define the number of images to be exported.

All currently displayed images are going to be exported in their current edited state.



3. Click this icon to open the **Export Images** dialog box.

4. Enter the path for the exported images.



5. Assign a meaningful name to the images.
6. Select the required image format and image quality (for JPEG images only).

#### Note

Please note that graphic objects or shutters may be lost in bitmap format. Images are exported with their current compression level. Wavelet-compressed images can only be stored in bitmap format.

7. Confirm with **OK**.

## Copying images to the clipboard



1. Load your study or series into one of the viewer windows (viewer 1, for example).



2. Select the number of images to be copied to the clipboard by choosing a display mode.



3. Click the **Copy to Clipboard** icon.

The images will be copied to the Windows clipboard. You can insert the images into other Windows applications from there.

## Sending data in the network

You can send data over the network from almost all Visage 7 Web Client windows, except for the basic MIP/MPR viewer.

This means that you can send data at all data levels.



Use the patient window (or worklist, if you are working in Expert Reading mode) to send all studies of one or several patients.

-Or-



Use the study/series window to send a study, presentation state, or one or several series.

-Or-



Use one of the viewer windows to send a single image or all loaded images.

To be able to send images, you must be connected to a DICOM network and your system administrator must have defined destination addresses for you.

After sending data you can check whether data transfer has been successful in the status information window.

## Sending data to selected address(es) (DICOM send)

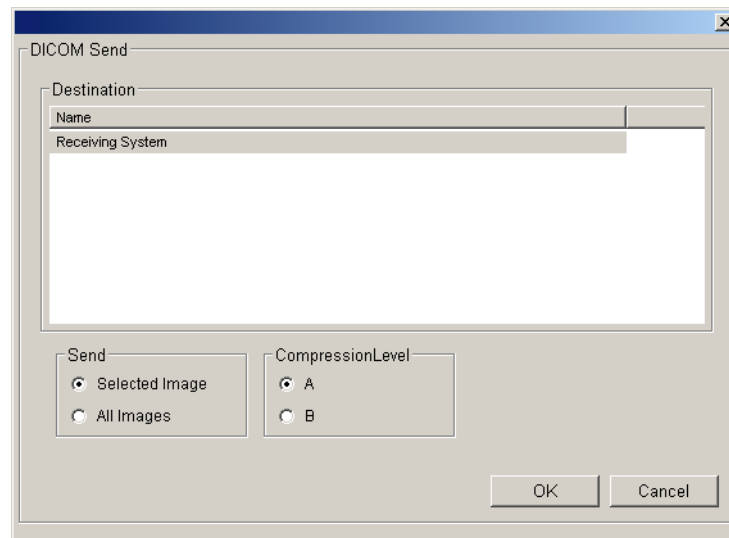
1. Select the data that you want to send via the network.



2. Click **DICOM Send** on the toolbar.

A dialog box with preconfigured addresses is shown.





3. Select one or more network nodes as the send destinations here.  
Depending on which data you want to send, you can also specify the following:
4. Select the compression method for sending the data.
5. Select whether the entire study, a selected presentation state, or one or several selected series are to be sent (when sending data from the study/series window).
6. Select whether a single image or all loaded images are to be sent (when sending data from a viewer window).
7. Click **OK** to send the data.

## Sending data to preselected address(es) (DICOM Quick Send)

**DICOM Quick Send** is a fast way of sending data to recurring destinations.

### Tip

Talk to your system administrator and ask him or her to set up standard network addresses to which you are repeatedly required to send data as a DICOM quick send node.

Depending on the configuration, **DICOM Quick Send** sends the data to one or more network addresses simultaneously.

1. Select the data that you want to send via the network.



2. Click **DICOM Quick Send** on the toolbar.

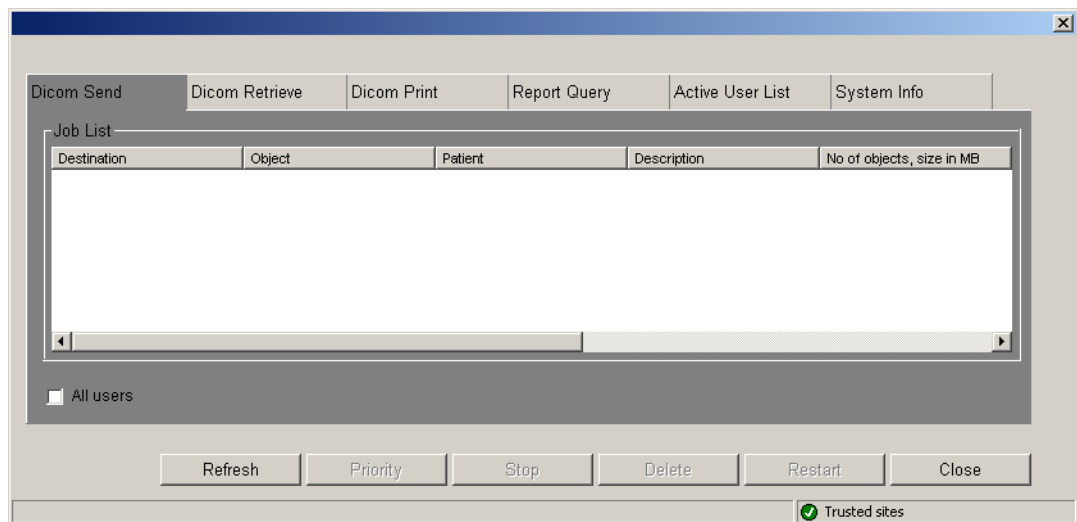
The data are immediately sent via the network, all data transmission parameters, such as network address(es), compression level, etc. have been predefined by your system administrator.

## Checking status information

The **Status information** window provides an overview of your data transfer jobs in the network and allows you to check whether these have been executed without error.



- Call **Status information** via the navigation bar.



### Tab cards

Here you will find information about all data transfer jobs that you have initiated:

- **DICOM Send**

Lists transfer jobs that you have passed on to other network nodes with **DICOM Send** or **DICOM Quick Send**.

- **DICOM Retrieve**

Lists all transfer jobs with which you called data from other network addresses in the patient window and transferred to your local Visage 7 database.

- **DICOM Print**

Lists all DICOM print jobs.

- **Query Report**

Lists queries for reports that you have requested from the HIS/RIS.

### Tip

Transfer jobs that involve the retrieval of data are only performed once. If, for example, you attempt to retrieve a study from the archive while a retrieval job for the same study that was initiated by another user is still being performed or pending your retrieval request will be ignored and therefore not listed in the **Status information** window.

Check the **All users** box if you cannot find your job on the corresponding tab card of the **Status information** window.

The **Status Information** window contains two additional tab cards:

- **Active user list**




A list of all users currently logged onto the Visage 7 server.

- **System Info**

Indicates which Visage 7 Web Client software version is installed, and which software patches are installed.

### Information about transfer jobs

On the tab cards, you will find the following information about data transfer jobs:

<b>All users</b>	Check this box to show all transfer jobs initiated by all Visage 7 Web Client users. -Or- Uncheck this box to show your own transfer jobs only.
<b>Destination/Retrieve from</b>	Name of the destination node or sender of the data.
<b>Object</b>	Which data have been sent or fetched (e.g. a study, series, or a single image).
<b>Description</b>	Text describing the object sent.
<b>Report received</b>	States whether a report has been successfully fetched from the HIS/RIS.
<b>Number of objects, size in MB</b>	Indicates the number of objects already transmitted, the total number of objects to be transmitted, and the volume of data to be transmitted in megabytes.
<b>Status</b>	Indicates the processing status of the job:
	<i>Pending</i> - The job has been addressed and is waiting for processing.
	<i>Processing</i> - The job is being processed.
	<i>Failed</i> - The job has failed.



**Successful** - The job has been successfully completed.

Note that depending on your system configuration successful execution of a **Report Query** may only confirm that the report node was successfully queried. It may not necessarily mean that a report was actually retrieved. If no report exists on the report node no report can be retrieved either. Consult you system administrator for information on how your system has been configured.

For **DICOM Print** jobs successful execution of the job can mean that the print job was successfully sent to the DICOM printer. It gives no indication of whether the images were actually printed. If the DICOM printer is out of paper, for example, a print job may have been successfully executed from a network point of view but in actual fact the images have not yet been printed.



**Canceled** - The job has been canceled.

**User** Visage 7 Web Client user who initiated data transfer.

**Priority** Priority of the job.

**Insertion** Date and time when data transfer was initiated in the format YYYY-MM-DD and hh:mm:ss (24-hour clock).

---

**Processing options** In the status information window you can:

---

Refresh

Refresh the display to make sure recently initiated transfer jobs are also shown.

Priority

Change the priority of selected jobs (if they have not already been successfully completed).

Stop

Stop jobs that currently have *Pending* or *Processing* status. The jobs are then no longer processed but remain in the job list.

Delete

Delete jobs from the job list (only possible for jobs that have been successfully completed or that have been canceled or have failed).

Restart

Restart jobs that have been stopped (*Canceled*) or have failed (*Failed*).

Close

Close the status information dialog box. The jobs it contains are still processed in the background.

---

# Managing the Diagnostic Reading Workflow

<b>Procedure step creation</b>	<p>The system helps you with managing the diagnostic reading workflow by supporting procedure steps.</p> <p>Visage 7 can be configured to create a new procedure step for every study that is sent to the Visage 7 server from a particular network node.</p> <p>For network nodes for which this feature has not been configured you can create a procedure step in Visage 7 Web Client.</p> <div data-bbox="470 910 1439 1038"><b>Tip</b><p>Talk to your system administrator to find out how procedure step creation is configured in your system.</p></div>
<b>Patient list filter</b>	<p>One of the filter criteria available in the patient list is the interpretation status of procedure steps.</p> <p>Filter the patient list so that it only shows patients whose study data contain a procedure step with status scheduled, for example. This filter setting can be stored in your user profile so that every time you log on to Visage 7 Web Client you will find only those patients and studies that are scheduled for interpretation.</p> <div data-bbox="470 1340 1439 1468"><b>Tip</b><p>Talk to your system administrator to find out if filter settings are configured to be stored in user profiles.</p></div>
<b>Mark as read</b>	<p>In all Visage 7 Web Client viewers physicians can mark a study as read. This sets the status of the associated procedure step to completed, and lists the name of the reading physician as performer.</p>
<b>Procedure step management in the study list</b>	<p>If a reporting physician forgot to mark a study as read in a viewer you can also do this from the study list or worklist. The study list or worklist is also from where you would reschedule a procedure step or delete procedure steps for studies that no longer require interpretation.</p>

## Creating a procedure step



1. Select the study for which you want to create a procedure step in the study/series window (client type Expert) or in the worklist (client type Expert Reading).



2. Click this icon to open the **Change Procedure Step** dialog box.

3. Select a priority, if you want, and confirm creation of the new procedure step.

A new procedure step of type *interpretation* is created for this study. Its status is *scheduled*.

Procedure Step	Status	Performer	Priority
Interpretation	SCHEDULED	-	MEDIUM

### Note

Visage 7 Web Client only supports procedure steps of type **Interpretation** in this software version.

## Filtering the patient list



1. Open the patient window (client type Expert) or worklist (client type Expert Reading).



2. Click the arrow next to the filter **Interpretation Status**.

3. Select SCHEDULED in the filter selection dialog box and click **OK**.

## Marking a study as read



1. Load a study into one of the Visage 7 Web Client viewer windows.
2. Review the images here and dictate or write your report.

3. Click **Mark study as read** before you move on to your next task.

The procedure step for this study has now been set to *completed* and your name has been entered as performer in the study list or worklist.

### Note

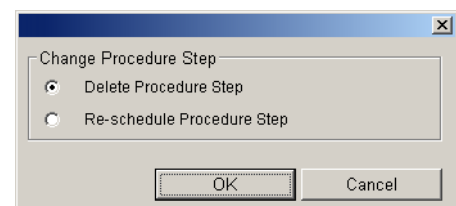
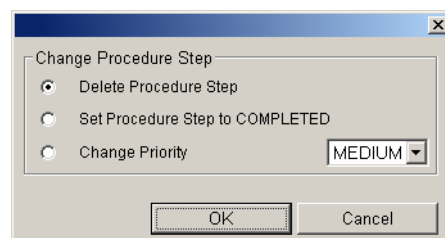
The **Mark study as read** icon is dimmed when you are reviewing a study for which no procedure step exists or whose procedure step has the status *completed*.

## Managing procedure steps in the study list

You can manage procedure steps from the study list or worklist. You can set the status of scheduled steps to completed, reschedule or delete procedure steps.



1. Select a study with a procedure step in the study/series window (client type Expert) or in the worklist (client type Expert Reading).
2. Click this icon to open the **Change Procedure Step** dialog box.



For procedure steps with status *scheduled* this dialog box allows you to set the procedure step status to completed, or change its priority, or delete the step.

For procedure steps with status *completed* this dialog box allows you to reschedule the procedure step or delete it.

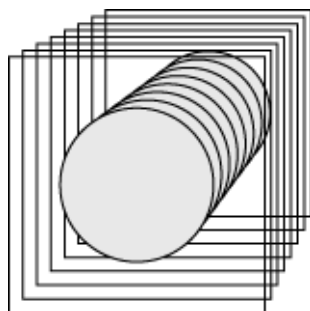
**3.** Select an option and click **OK**.



# Working in the Basic MIP/MPR Viewer

Scanning a body volume with a computer tomograph or magnetic resonance tomograph produces a sequence of two-dimensional slice images.

If these slice images were acquired with suitable acquisition parameters, Visage 7 Web Client can calculate volume data and provide a spatial impression of the examined region.



You can move through this display as you would through a three-dimensional model. That is, you can calculate and display new slices irrespective of the original scan direction and orientation of the slices acquired.

## Note

3D reconstruction is only possible for series produced with the modalities CT and MR, and only if the series fulfill a number of technical requirements.

This section provides information about:

- *3D basics*
- *Anatomical standard views*

You will also learn how to proceed when:

- *Changing display properties for slice images*
- *Working with the orientation cube*
- *Moving and rotating slices and generating slice images*
- *Changing the slice thickness for slice images*

## 3D basics

### Technical requirements

For Visage 7 Web Client to be able to calculate a volume data set from a series, the images must fulfill the following preconditions:

- The modality must be CT or MR
- One series must be selected.
- The photometric interpretation must be MONOCHROME2.
- The value for *Bits Allocated* must be 16.
- The value for *Samples per Pixel* must be 1.
- All images must be of the same size.
- All images must have the same orientation.
- The upper left point of all images must be on one straight line.
- The distances between consecutive images must be identical.

### Calculation methods

Visage 7 Web Client gives you a choice of two 3D calculation methods:

- Multiplanar reconstruction (MPR)

This method is especially suitable for producing secondary slice images, that is, slices with a new orientation through the region being examined. The result is always a new two-dimensional image.

- Maximum intensity projection (MIP)

Maximum intensity projection looks through the volume in one direction and projects the volume pixels with the greatest intensity onto a surface.

#### Tip

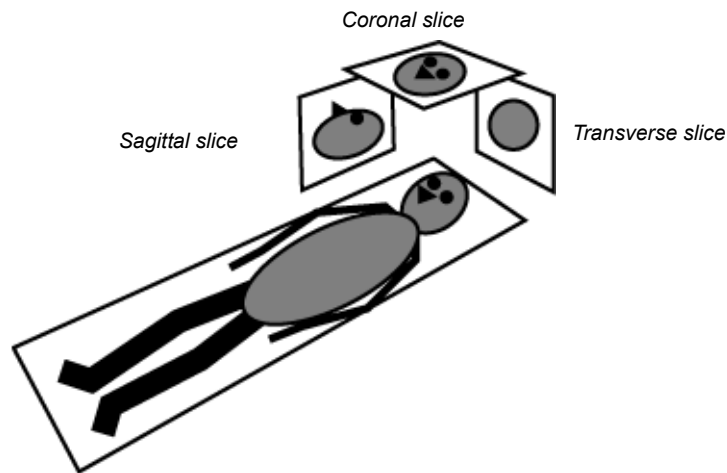
Maximum intensity projection (MIP) is especially suitable for contrast agent examinations in angiography. Vessels filled with contrast agent then appear in the volume as structures with the most intensive grayscale values.

## Anatomical standard views

Immediately after you have loaded a series into the basic MIP/MPR viewer, the slice images of the anatomical standard views are displayed in the slice segments.

These standard orientations are:

- transverse
- sagittal
- coronal



## Changing display properties for slice images

You can optimize the display of the slice images in the slice segments or the orientation cube in the overview segment.

You can perform these processing steps both in the overview segment and in the slice segments:

- *Windowing*
- *Zooming and panning images*
- *Resizing an image automatically*
- *Switching the calculation method*

## Windowing

1. Select operating mode **Windowing** from the popup menu.



The operating mode is now shown bottom left in the segment and the mouse pointer changes shape.

2. Left-click and drag the mouse pointer over the image:  
**up/down** - to change the **center**, making the image brighter or darker,  
**right/left** - to change the **width**, increasing or decreasing image contrast.
3. Select **Apply to All** from the popup menu if you want to apply these window values to all other segments, too.

## Zooming and panning images

### Zoom

1. Select operating mode **Zoom** from the popup menu.



The operating mode is now shown bottom left in the segment and the mouse pointer changes shape.

2. Left-click and drag the mouse pointer over the image:  
**up** - to enlarge the image,  
**down** - to reduce the image,  
When you release the mouse button, the image will keep its new size.

### Pan

If parts of the images are no longer visible in the segment after enlargement:

1. Select operating mode **Pan** from the popup menu.



The operating mode is now shown bottom left in the segment and the mouse pointer changes shape.

2. Left-click and drag the image.

### Apply to All

After zooming or panning in one of the slice segments, you can apply the new display settings to the other slice segments, too.

Simply select **Apply to All** from the popup menu.

You cannot apply display settings from the overview segment to slice segments.

## Resizing an image automatically

### Fitting to segment

Select **View > Fit into Segment** from the popup menu.

The slice image or the orientation cube is zoomed to fit it optimally into the segment.

-Or-

### Original size

Select **View > Original Size** from the popup menu.

The slice image or orientation cube is shown in its original size as calculated.

-Or-

### Full screen

Select **View > Full Size** from the popup menu.

All other 3D view segments are hidden and the current segment is shown in full window size.

Select **View > Full Size** again from the popup menu to exit this view.

## Switching the calculation method

When you load a series into the basic MIP/MPR viewer, the volume data set is first calculated by the multiplanar reconstruction (MPR) method.

You can switch over to the maximum intensity projection (MIP) calculation method if that gives you a clearer view of the phenomena you are interested in. Switching to the calculation method applies to the currently selected segment only.

Select **MIP** from the popup menu.

-Or-



Click on the calculation method display in the lower right corner of the segment to switch between MPR and MIP.

## Working with the orientation cube

The calculated volume data is shown as an orientation cube in the overview segment (bottom right) of the basic MIP/MPR viewer. This shows you the orientation and position of the slice images displayed in the three slice segments.

To obtain a clearer view, you can rotate this cube and show or hide single slices and the volume limits.

- *Rotating the orientation cube*
- *Display of the individual slices in the orientation cube*

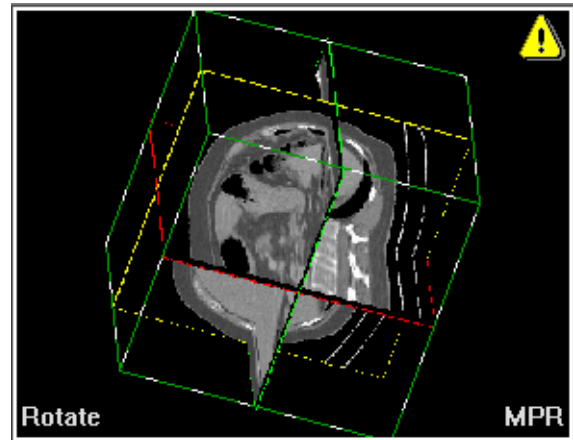
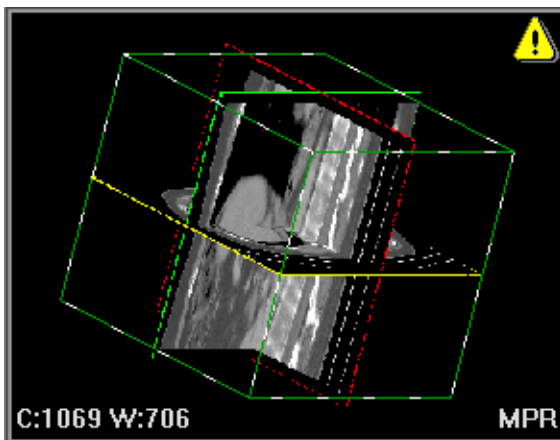
### Rotating the orientation cube

1. Select operating mode **Rotate** from the popup menu of the overview segment.



The operating mode is now shown bottom left in the segment and the mouse pointer changes shape.

2. Now click on any point in the overview segment and keep the left mouse button pressed.
3. Drag the mouse in the direction in which you want to rotate the cube.
4. Release the mouse button again to stop rotating.



## Display of the individual slices in the orientation cube

You can show or hide individual slices in the orientation cube by selecting the **View** item from the popup menu in the overview segment.

---

<b>Hide all slices</b>	Hides display of all slices.
<b>Show All slices</b>	Re-displays all slices.
<b>Slice1 (2, 3)</b>	Shows or hides the slices of segment 1, 2, or 3.
<b>Volume box</b>	Shows or hides the volume box.

---

## Moving and rotating slices and generating slice images

In the calculated volume data set, you can move the displayed slice images to generate new slices.

This can be done in different ways:

- You can move through the volume data set along the other two main axes in a slice segment.
- You can use the slice cursor in a slice segment to move one or both slices in the other segment or segments.
- You can generate slice images with any orientation or position by rotating and then moving the slice cursor.

### Moving a slice in a slice segment

1. Select **SliceShift** operating mode from the popup menu in the slice segment whose slice image you want to move.



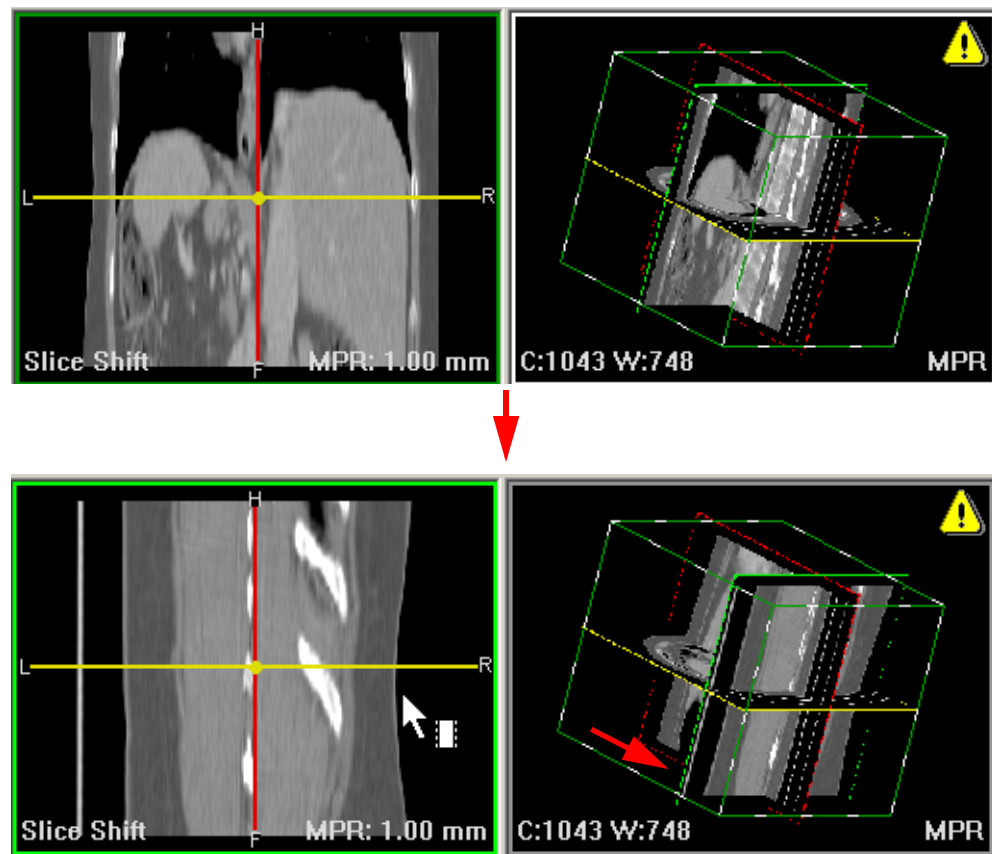
The operating mode is now shown bottom left in the segment and the mouse pointer changes shape.

2. Click on the image and drag the mouse up or down to move through the volume data set with this slice.

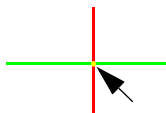
Do not accidentally click on the slice cursor line!

As long as you keep the mouse button pressed, the new slice image is indistinct. It is updated and shown distinctly as soon as you release the mouse.

You can monitor movement of the slice in the orientation cube.



## Moving one or more slices with the slice cursor



1. Click on the point of intersection of the two slice cursor lines in a slice segment to move the slices in the other two segments.



The mouse pointer is now shown like this.

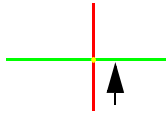
2. Keep the mouse button pressed and move both slice images simultaneously with the point of intersection.

As long as you keep the mouse button pressed, the new slice images in the other two segments are only indistinct. They are updated and shown distinctly as soon as you release the mouse.

You can monitor movement of the slices in the orientation cube.

-Or-





1. Click on a cursor line near to the point of intersection in a slice segment to move just this slice in the other two segments.

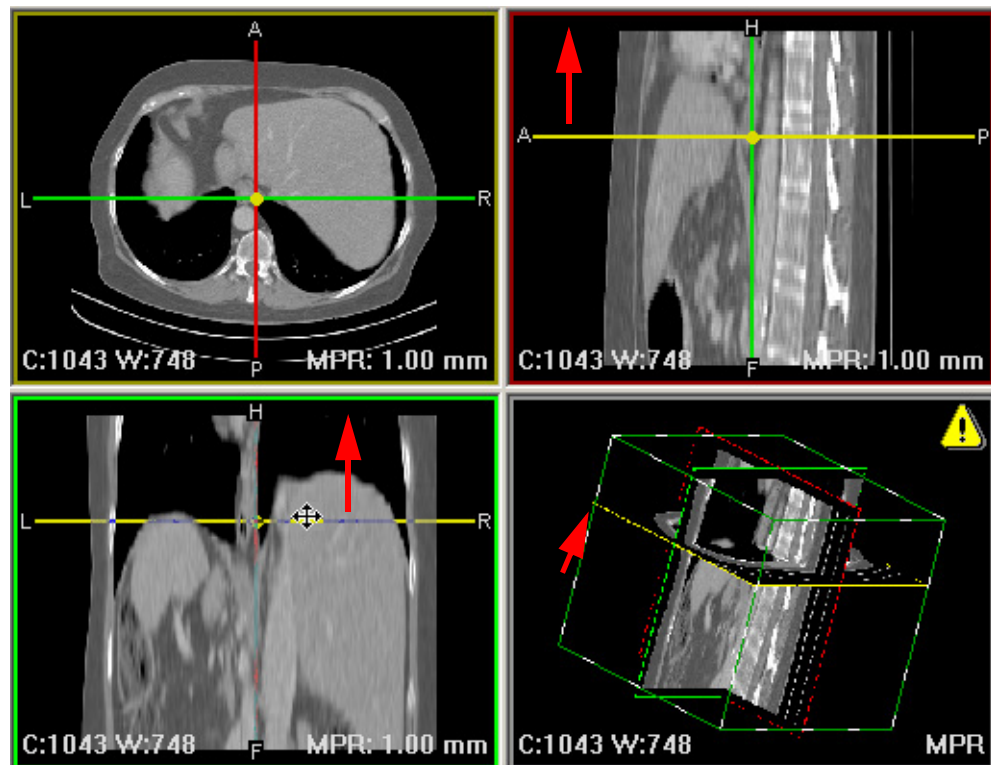


The mouse pointer is now shown like this.

2. Hold the mouse button down and move the line and also a slice.

The new slice image is first only displayed indistinctly. As soon as you release the mouse button, it is shown distinctly.

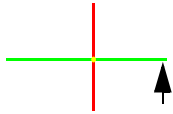
You can monitor movement of the slice in the orientation cube.



#### Tip

If the slice cursor is currently hidden in a segment, make it reappear with **View > SliceCursor** from the popup menu.

## Generating slice images in views other than the standard views



1. Click on a slice cursor line a good distance from the point of intersection in a slice segment.



The mouse pointer now looks like this.

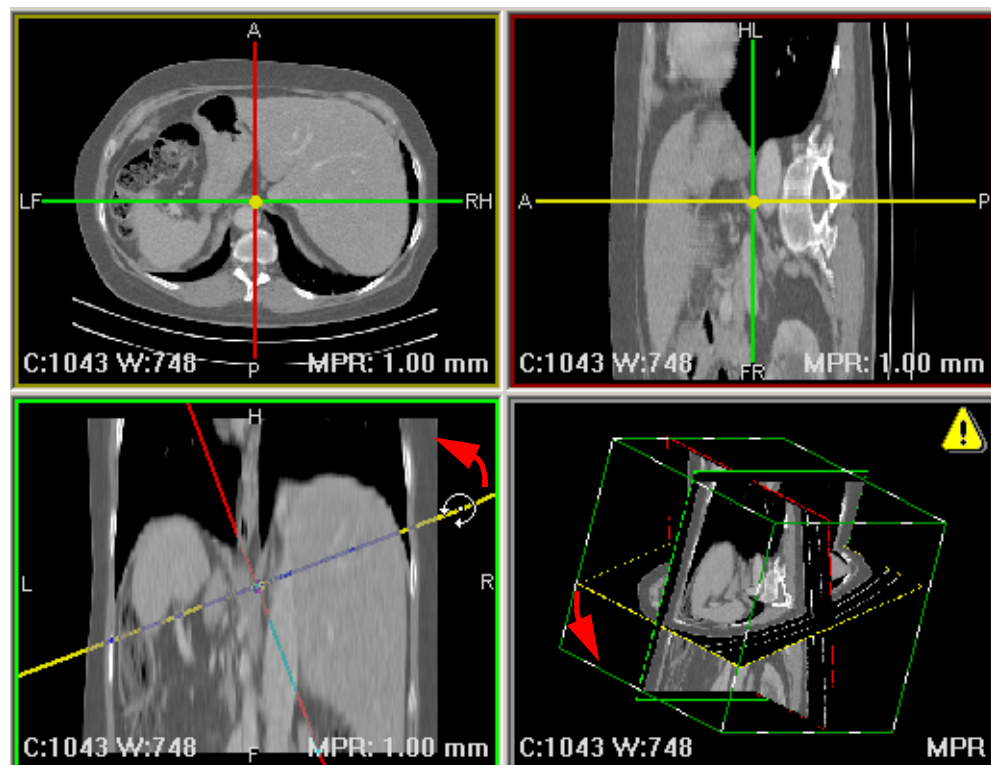
2. Keep the mouse button pressed and move the mouse up, down, left, or right.

This rotates the cross-hair of the slice cursor and rotates the two selected planes.

You can monitor movement of the slices in the orientation cube.

### Tip

By then moving one or both of the new slices, you can generate any slice through the volume.



## Changing the slice thickness for slice images

Increasing the slice thickness has the effect of softening the slice image. In a thicker slice, more volume pixels are used to calculate a pixel in the two-dimensional image. The values of the volume pixels are averaged.

Conversely, reducing the slice thickness makes the image grainier.

The default value for the slice thickness of slice images is 1 mm. The value is displayed bottom right in each slice segment.

## Changing the slice thickness for the current segment

This is how you change the slice thickness for the segment in which you are working:

1. Select **SliceThickness** operating mode from the popup menu in the slice segment whose slice thickness you want to change.



The operating mode is now shown bottom left in the segment and the mouse pointer changes shape.

2. Click on the image and drag the mouse:

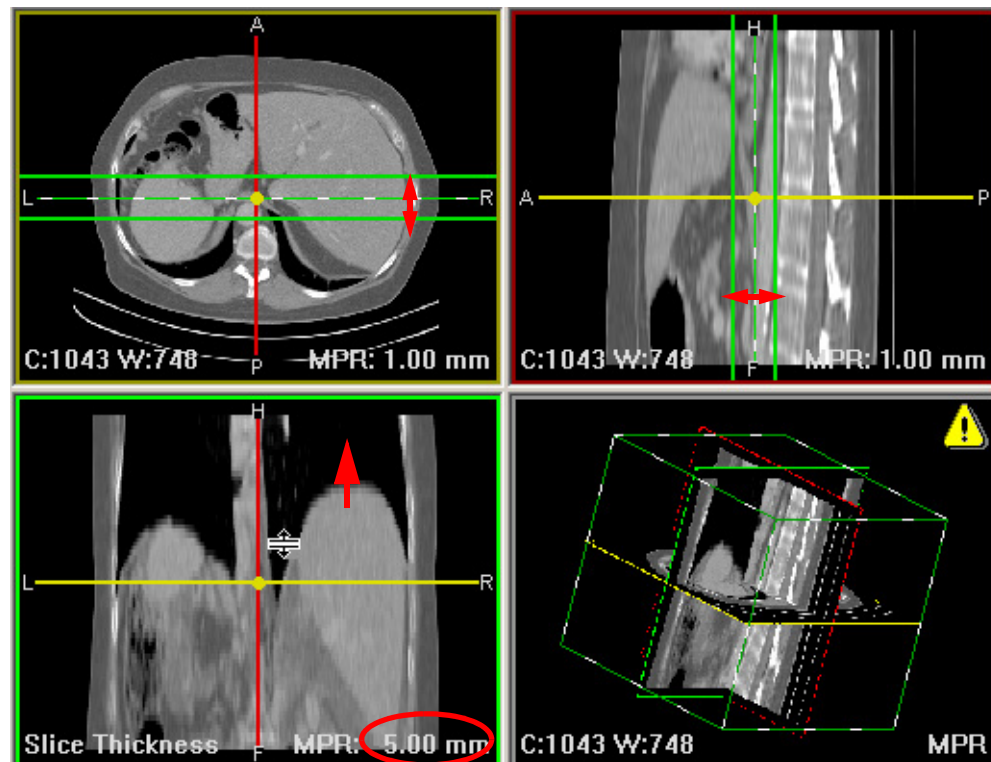
**up** - to increase the slice thickness

**down** - to reduce the slice thickness

Do not accidentally click on the slice cursor line!

As soon as you release the mouse, the new slice image is shown distinctly.

In the other two slice segments, the new slice thickness can be seen by its thicker or thinner slice cursor line.



## Changing the slice thickness with the slice cursor

This is how you change the slice thickness in another slice segment:



1. Click on the slice cursor line of the segment whose slice thickness you want to change and keep the **Ctrl** key pressed.



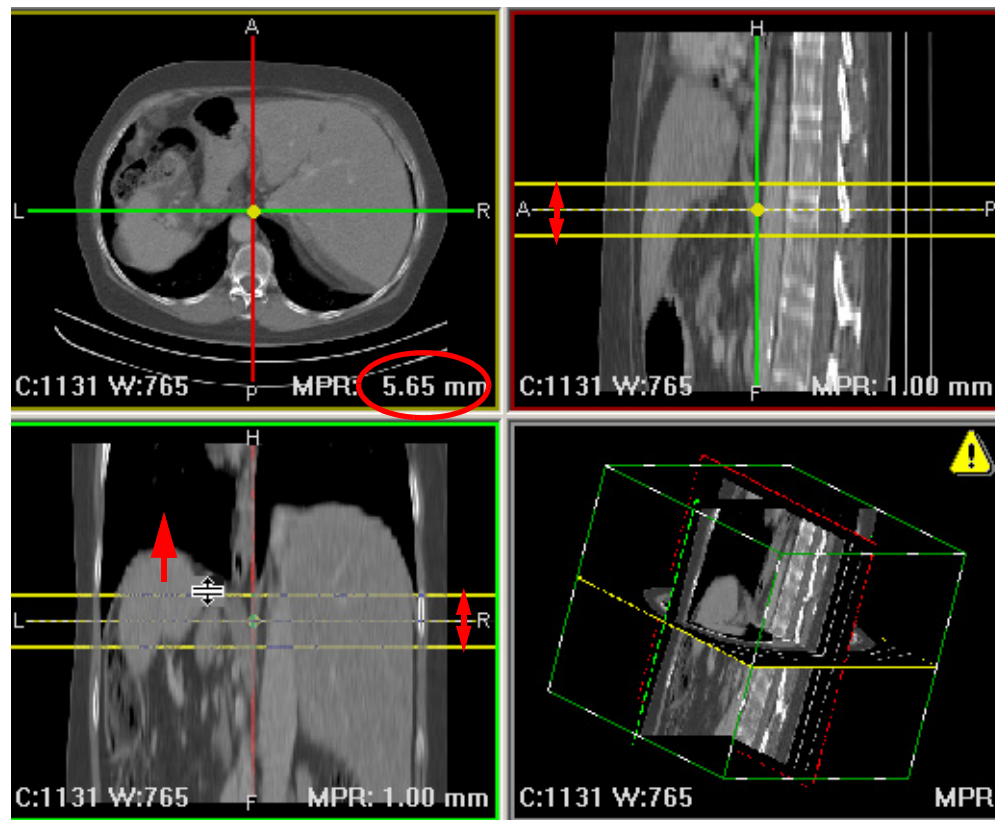
The mouse pointer has the same appearance as the moving cursor.

2. Hold the mouse button down and move the mouse pointer:

**up** - to increase the slice thickness in the other segment  
**down** - to reduce the slice thickness in the other segment

As long as you keep the mouse button pressed, the new slice image is indistinct. It is updated and shown distinctly as soon as you release the mouse.

In the other two slice segments, the new slice thickness can be seen by its thicker or thinner slice cursor line.





# Reviewing and Reporting on Images in the Display Protocol Viewer



Client type Expert Reading features a viewer that is particularly well-suited for comparing image data of several series or more than one study (such as a current and earlier examination, for example).

## Caution

When reviewing images of a current and previous study be sure to show image texts in the display protocol viewer. This will help you distinguish the two studies in the various viewports. Be sure you have correctly identified the current study when reporting on the image data.

This section will explain how to work with the display protocol viewer when reviewing and reporting on images:

- *Image text and image icons*
- *Changing display settings*
- *Loading images from the thumbnail browser*
- *Synchronized scrolling*
- *Editing images*
- *Evaluating and annotating images*
- *Viewing and editing a report*

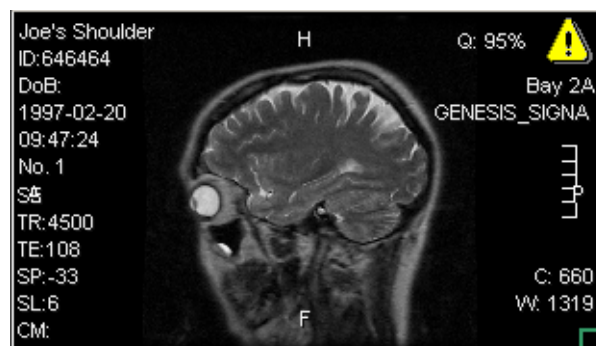
## Image text and image icons

In the Visage 7 Web Client viewer windows, patient, study, and image information can be shown as image text or icons in the images.

**Image text**

The image text is arranged in text blocks around the edges of an image in this way:

(1)	(2)	(5)
(2)		(2)
(3)	(2)	(4)



- (1) Patient and examination data
- (2) Orientation labels
- (3) Acquisition parameters
- (4) Window values and filter settings
- (5) Hospital and system information including information on compression level and image quality.

Image texts that are very long are truncated. For example, if a study comment text is very long, only the first 64 characters are displayed.

Depending on the modality and image type, additional information can be displayed or certain information can be omitted or only displayed in certain modalities. (In XA scenes, for example, orientation labels are hidden).

Your system administrator can configure the image texts for each modality.

**Image icons**

In addition to image text, image information may be shown in the form of icons in the images.

**Changed image information**

Lossy compressed image: The quality of the image may have been affected (artifacts). The quality percentage is indicated next to the icon.

This warning triangle remains visible even if the image texts are hidden.



When loading images into one of its viewers, Visage 7 Web Client checks the DICOM header information in every single image.

If this DICOM header information does not agree with the patient and study data stored in the Visage 7 database for one or several images, this icon is displayed in the upper right-hand corner of the affected images.



The display protocol may define the sort order for the images of a series in the display protocol viewer according to certain criteria. If images cannot be sorted according to these criteria the system alerts you to this fact with this icons.





This icon in the upper right-hand corner of the image segment indicates that calibration has been applied to distance lines in this image.



This icon indicates that the displayed images do not originate from an original scan series (thin slice series) but were generated by a Visage 7 thick slice compilation rule.

### DICOM print selection

In the lower right-hand corner of each image you will see a small green box which indicates whether the image is currently selected for DICOM print.



An empty box indicates no selection.



A solid box indicates selection for DICOM print.

### Marked images

These flags are only available in a Siemens diagnostic environment.



The image is marked with a flag.



The image is marked with a star.

### Exam status

These flags are only available in a Siemens diagnostic environment.

New: no report status has been issued yet.



Prepared: the images are ready for reporting.



Reported: the study has been reported.



Signed off: the study has been signed off by the physician.



Unknown: no report status available.

### Report status

These flags are only available in a Siemens diagnostic environment.



Dictated: the report has been dictated.



Written: the report has been written.



Validated: the report has been validated by the physician.

## Changing display settings

As soon as you have loaded images (i.e. double-clicked a patient in the worklist, for example) the display protocol viewer will open. This viewer is shown with the screen layout of the preselected display protocol or the display protocol you selected in the worklist.

In most cases the images of your study (or studies) are immediately shown in the various viewports of this layout so that you can start reviewing these images right away.

In some cases you may, however, find that this screen layout is, after all not the ideal one for the diagnostic problem at hand.

In this case you can load a different display protocol or change the display mode in one or several viewports.

## Selecting a different display protocol



1. Return to the worklist window.
2. Double-click a different protocol in the display protocols list.

This will change the screen layout in the display viewer. It will not affect the loaded data.

### Note

Protocols labeled “blank” do not load image data into the viewports. You will have to do this yourself with the help of the thumbnail browser.

## Adding or removing viewports



Use **Next/Previous Viewer Layout** to scroll through the viewer layouts of your currently active display protocol.

-Or-



Use the + or - keys on your keyboard to show more viewports if these have been configured in your current display protocol.

-Or-



Use the number keys to show more or fewer viewports.

## Changing the display mode in a viewport



1. Click a viewport to select it.

The selected viewport is highlighted by a colored border.



2. Drop down the display mode icon bar and select a different mode.

1x1 is considered stack mode in the display protocol viewer as the images are arranged in the viewport as an image stack.

2x1, 2x2, 3x2, 3x3, and 4x4 are considered tile mode.

## Loading images from the thumbnail browser

If you have selected a blank display protocol before loading data, no images are shown in the viewports of the display protocol viewer.

You are expected to distribute the series of your study (or studies) over the available viewports yourself in this case.



1. Click a series in the thumbnail browser to select it.
2. Drag it into the viewport in which you want to show it.
3. Release the mouse button to load the series into this viewport.

If required you can load more than one series from the same study into one viewport. This way you can browse through the series of one study consecutively later on.

### Tip

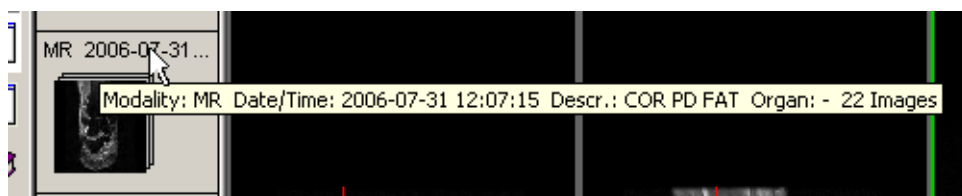
If you find it hard to identify the correct series in the thumbnail browser resize the thumbnail browser section.



-Or-

### Tip

Place the mouse cursor over a series label to show a tool tip with the series name in full length.



## Synchronized scrolling

Viewports can be linked for synchronized scrolling. Linking of viewports can either have been defined in the display protocol, or you can link viewports manually before you start scrolling.

Visage 7 Web Client offers two modes for synchronized scrolling.

- *Automatic mode*

In this mode the system will automatically select corresponding images.

- *Manual mode* (by position or by index)

In this mode the system uses geometrical position information stored in the images or the images number to select which images are shown next.

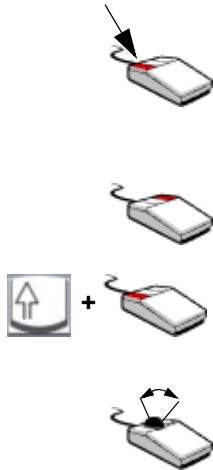
#### Note

In manual mode the physician is responsible for selecting suitable start images before linking viewers and starting synchronized scrolling.

#### Tip

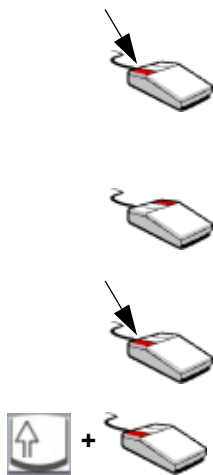
If you selected a synchronization mode that is not supported by the currently displayed image data a message will help you with finding a supported mode.

### Automatic mode



1. Click the first viewport to select it.  
The viewport is highlighted with a colored border.
2. Display the image with which you want to start synchronized scrolling in this viewport.
3. Select **Automatically** as a synchronized scrolling mode from the popup menu.
4. Hold the **Shift** key down and click the second viewport.  
This second viewport is now also highlighted with a colored border.
5. Start scrolling in both viewports simultaneously.  
Use the wheel mouse, cine mode or interactive cine mode to do so.

### Manual mode



1. Click the first viewport to select it.  
The viewport is highlighted with a colored border.
2. Display the image with which you want to start synchronized scrolling in this viewport.
3. Select **Manually (by Position)** or **Manually (by Index)** as a synchronized scrolling mode from the popup menu.
4. Click the second viewport and show the image with which you want to start synchronized scrolling in this viewport.
5. Hold the **Shift** key down and click the first viewport again.  
Both viewports are now highlighted with a colored border.



6. Start scrolling in both viewports simultaneously.

Use the wheel mouse, cine mode or interactive cine mode to do so.

## Editing images

In the display protocol viewer you can review, edit, and evaluate images in just the same way as in the viewer windows in client type Expert, for example.

These are the image editing and evaluation options available in the display protocol viewer:

### Screen layout

- *Showing, hiding, or moving the toolbar*

You cannot move the toolbar in the display protocol viewer. However, you can only lock and unlock its display.

- *Showing and hiding image text*
- *Showing and hiding graphic objects and shutters*
- *Working with color palettes*

### Scrolling images

- *Image by image - slow scrolling*
- *Cine mode - fast scrolling*

### Scoutlines

- *Displaying scoutlines*

When reviewing images with scoutlines you use the viewports of the display protocol viewer in a similar way to how you use compare mode in the client type Expert.

### Editing images

- *Selecting and editing images (general procedure)*
- *Zooming and panning images*
- *Windowing and filtering images*
- *Rotating, flipping, and inverting images*

### Printing and exporting images

- *Printing images on a Windows printer*
- *Exporting images from the viewer*
- *Copying images to the clipboard*

Please refer to chapter *Printing, Exporting, and Sending Images* (page 191) for details on these options.

## Evaluating and annotating images

Just like in the viewers of the other client types you can measure distances and angles, evaluate ROIs, or measure density in images in the display protocol viewer of Expert Reading. Unlike in the image viewers of the other client types, however, you can save these measurements in Expert Reading, and you can also add annotations to highlight or comment on findings.

### Performing measurements



1. Drop down the **Measurement Functions** toolbar.

2. Select one of these icons:

**Distance Measurement** - to draw a line and measure its length

**Calibrate Distance** - to calibrate the distance measurement function.

**Angle Measurement** - to measure angles.

**Pixel Lens** - to show the pixel density of a point in an image.

**Density Profile** - to show the density profile along a line.

**ROI Rectangle / ROI Ellipse** - to evaluate a region of interest.

Refer to the following sections for details on how to proceed with these measurement tools. Also be sure to observe the following warnings concerning measurement errors.

- *Density measurements* (page 187)
- *Measuring distances and angles* (page 179)

#### Caution

The accuracy of **distance measurements** is  $\pm 2$  pixels. Larger errors can occur if the image is displayed with reduced matrix size, that is if not every original pixel is shown on the screen due to zoom-out. For optimum accuracy we recommend zooming into the structure of interest as much as possible. The accuracy is further limited by the physical resolution of the acquisition itself. If the monitor used for display does not permit exact pixel selection, the inaccuracy can be greater still.

**Caution**

The accuracy of **angle measurements** depends on the length of the shorter of the two angle legs. The longer the angle legs are, the better the accuracy.

For example:

Length of shorter angle leg (measurement error):

10 pixels ( $\pm 12^\circ$ ), 20 pixels ( $\pm 6^\circ$ ), 50 pixels ( $\pm 2.5^\circ$ ), 100 pixels ( $\pm 1.1^\circ$ )

Larger errors can occur if the image is displayed with reduced matrix size, that is if not every original pixel is shown on the screen due to zoom-out. For optimum accuracy we recommend zooming into the structure of interest as much as possible. The accuracy is further limited by the physical resolution of the acquisition itself. If the monitor used for display does not permit exact pixel selection, the inaccuracy can be greater still.

- *ROI evaluation* (page 184)

**Caution**

The relative error of the elliptical or rectangular **ROI measurements** is  $\pm 2$  pixels/ (shorter radius or shorter side).

For example:

Shorter radius or shorter side (measurement error):

10 pixels ( $\pm 20\%$ ), 20 pixels ( $\pm 10\%$ ), 50 pixels ( $\pm 4\%$ ), 100 pixels ( $\pm 2\%$ )

Larger errors can occur if the image is displayed with reduced matrix size, that is if not every original pixel is shown on the screen due to zoom-out. For optimum accuracy we recommend zooming into the structure of interest as much as possible. The accuracy is further limited by the physical resolution of the acquisition itself. If the monitor used for display does not permit exact pixel selection, the inaccuracy can be greater still.

## Creating annotations



1. Drop down the **Create Annotation** toolbar.
2. Select one of these icons:
  - Arrow Annotation** - to draw an arrow.
  - Text Annotation** - to add text.
  - Arrow and Text Annotation** - to combine an arrow and text annotation.
  - Circle Annotation** - to draw a circle around an area of interest.
3. Click in the image, hold the mouse button down, and draw your arrow or circle, for example.



If you have selected **Text Annotation** the **Text Input** dialog box opens when you click the spot in the image where you want to add text.

Enter your annotation text here.

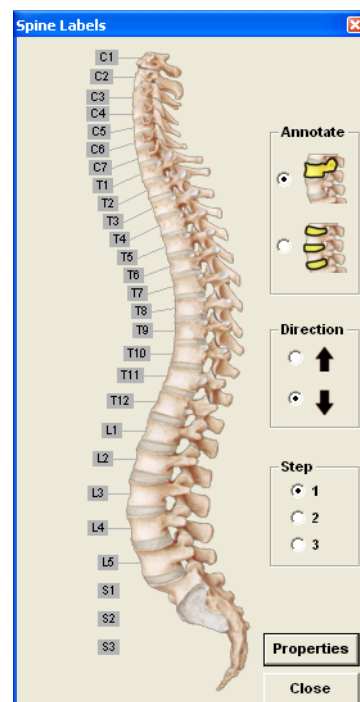
Use **Ctrl.+ Return** for line feeds. Use the **Properties** button in the **Text Input** dialog box to change formatting information for your text (e.g. text color or font settings).

## Spine labeling

Spine labeling offers a quick way to label vertebrae and intervertebral spaces in images of the spine.



1. Click this icon in the **Create Annotation** dropdown toolbar to open the **Spine Labels** dialog box.



In order to label vertebrae or intervertebral spaces proceed as follows:

1. Select whether you want to label vertebrae or intervertebral space in the **Annotate** box.
2. Select the **Direction** in which you want to proceed.
3. Select if you want to label vertebrae or intervertebral space consecutively or if you want to label only every second or only every third vertebrae or intervertebral space in the **Step** box.

4. Select the vertebra or intervertebral space label with which you will begin.
5. Now start clicking vertebrae or intervertebral spaces in your image from top to bottom or bottom to top.
6. Use the **Properties** button in the **Spine Label** dialog box to change font settings or graphical display settings for the labels and arrows.

## Editing measurements and annotations



1. Click **Select Annotation/Measurement** to change your graphic or text.
2. Click a graphic to move it.

-Or-

Click an end point of a line or a grab handle to resize the graphic.

-Or-

Right-click a graphic or annotation and select **Properties** from the context menu to change font settings or graphical properties.

## Saving measurements and annotations

With appropriate user rights you can save measurement graphics or annotations back to the web server. In subsequent Visage 7 Web Client sessions you or other users can now browse through any annotated images in this series or study using the **Previous/Next Annotated Image** icons in any of the viewer windows.



1. Click **Save Annotations** to save any annotations and measurement graphics you have added to your images during your current Visage 7 Web Client session.

The icon appears depressed while Visage 7 Web Client uploads your annotations and measurement graphics for the currently displayed image. A message is shown when uploading is finished.

### Tip

If you do not have sufficient user rights to save annotations and measurement graphics the **Save Annotations** icon is not shown in your display protocol viewer toolbar.

To preserve an image with annotations anyway use the **Copy to Clipboard** tool and paste what is currently shown on the screen in another Windows application program, for example.

## Viewing and editing a report

In the display protocol viewer you can create, edit, or review reports for your studies. You use the Visage 7 Web Client report editor to do so and proceed in a similar way as when reviewing or editing a report in client type Expert with only a few differences.

See also *Editing a report* (page 139).

### Displaying a report



Click the **Edit Report** icon in the toolbar.

If a report already exists for a study it is now shown in the report window in read-only mode. The report window opens in a floating window. You can move it around on the screen so that it is not in your way when reviewing images.

### Creating a report



Click the **Edit Report** icon in the toolbar.

If no report exists for a study **Edit Report** will create one for you. The report window is now shown in editing mode and a report template has been loaded.

### More than one study loaded

If you have loaded more than one study into the display protocol viewer:

- The report that belongs to the study in the currently active viewport (viewport with the colored border) will open when you click the **Edit Report** icon.
- The study whose report is currently shown in the report window is highlighted by a colored header in the thumbnail browser.
- Only one report window can be open at a time.

In order to view the report of another loaded study:

If the report window is shown read-only:

Simply click on a viewport that shows images of the second study.

The report window will be updated. It now displays the report of the second study.

If the report window is in editing mode:

Report display will not be updated when you click the viewport of another study. You are expected to save or discard your changes and close the report window before you can open another report.

### Saving the report and signing a study off

#### Note

Be aware that when you save your finished report this will only create a report on the Visage 7 server. The report will not be communicated to the HIS/RIS.



1. Use this icon to save your new report (i.e. upload it to the web server) when you have finished typing it.



2. Do not forget to also mark your study as read.

This will set the procedure step for this study to *completed* and your name will be entered as performer in the worklist.

# Setting up an Online Conference

A conference in the Internet or intranet allows you to communicate with colleagues. All conference participants can view and annotate an image shown on the whiteboard with text or graphics. These annotations are visible to all participants.

Participants in an online conference may also communicate via video and audio channels if their PCs are equipped for it.

The conference mode is implemented with the external Microsoft program "NetMeeting".

## **NetMeeting server**

The NetMeeting server program is installed on the Visage 7 server. This program coordinates the communication between the various participants in an online conference.

## **NetMeeting client**

Before you can take part in an online conference, the NetMeeting client program must be installed on your local PC.

### **Note**

If Microsoft NetMeeting has not yet been installed on your PC, please contact your system administrator. You should not try to install NetMeeting yourself.

## **Further information**

For more detailed information on net meetings please refer to the Microsoft NetMeeting online help.

In addition, further information about NetMeeting is available at the following address: <http://www.microsoft.com/windows/netmeeting/>

This section explains NetMeeting basics and procedures:

- *NetMeeting elements*
- *Connecting to an interlocutor*
- *Working with the whiteboard*
- *Ending an online conference*

## NetMeeting elements

These are typical elements that you will use when you have a net meeting:

- *The whiteboard*
- *Sound and video*
- *Application sharing*

### The whiteboard

The "whiteboard" is a kind of electronic drawing board to which all participants in a net conference have access.

You can copy images from one of the Visage 7 Web Client viewer windows to the Windows clipboard and from there paste them to the whiteboard.

All parties to the conference can attach graphical or text comments to the image currently being displayed. All other participants in the net meeting can then read these comments. Whoever entered a comment can delete or change it again at any time.

Each participant in a conference can also activate a "presentation pointer" which is then visible in the whiteboard window for all the other parties.

### Sound and video

Participants in a net conference can communicate with one another over video and sound channels, as long as their computers are equipped with the necessary hardware, of course.

If you want to set up communication in the form of an audio conference, a sound card must be installed in your PC. You will also need loudspeakers and a microphone both of which must be installed and switched on.

In order to be able to make use of the video functions of NetMeeting, you will need a video capture card and camera or a video camera, which is connected to the parallel port (print authorization) of your computer.

### Application sharing

So-called application sharing allows you to let the participants in a net conference participate in your work with Visage 7 Web Client. The parties to the conference can view your activities in Visage 7 Web Client and see the images you are working with.

With this application, the participants in the net conference can follow your work without having installed the program themselves and without having specific knowledge of how to handle this program.

## Connecting to an interlocutor

1. Launch the NetMeeting Client program.
2. Log onto the NetMeeting server with your email address or IP address.
3. Call your interlocutor with the NetMeeting button.

If the interlocutor confirms your call, the connection has been established and the conference can start.

### Tip

Click the **Status Information** icon on the navigation bar and move on to the **Active User List** tab card. Here you will find a list of all users currently logged on to the Visage 7 server.

## Working with the whiteboard

The whiteboard is a component of NetMeeting. It is an electronic chalkboard that all conference participants can access.

### Copying an image to the whiteboard



1. Switch to one of the Visage 7 Web Client viewers.
2. Scroll to the image you want to discuss.
3. Copy the image to the Windows clipboard.
4. Switch to the whiteboard.
5. Insert the image (**Edit > Paste** or shortcut **Ctrl + V**).

### Tip

The clipboards of conference participants are open and visible to all other participants. You can insert the contents of somebody else's clipboard into your own local programs.

However, you can protect your own clipboard from access by other participants. Ask your system administrator for details.

<b>Annotating an image</b>	<p>All conference participants can annotate the image shown on the whiteboard with text or graphics.</p> <p>Each conference participant can delete their own annotations.</p> <p>The text and graphics annotations are entered just like in any other Microsoft graphics program.</p>
<b>Synchronized mouse pointers</b>	<p>Each conference participant can activate a pointer on the whiteboard which is visible to all others.</p>

## Ending an online conference

As a regular participant you can exit the online conference while the others continue their discussion.

If you are the host who convened the conference, you can terminate it for everyone.

<b>Exiting a conference</b>	<p>Click the <b>Hang Up</b> button in your NetMeeting program.</p> <p>-Or-</p> <p>Select <b>Call/Stop Call</b> from the menu.</p> <p>This interrupts the connection with all the people you called or who called you. This will also disconnect people invited to the conference or accepted by other participants. It may, however, not disconnect audio links.</p>
<b>Finishing a conference</b>	<p>Click the <b>Finish Conference</b> button in your NetMeeting program.</p> <p>-Or-</p> <p>Close NetMeeting.</p>



# Functions and Information for Advanced Users

This section explains functions that are not required for daily routine tasks with Visage 7 Web Client.

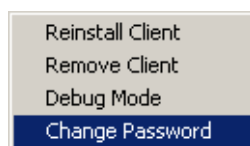
- *Changing the password*
- *Updating the client software*
- *Performing data maintenance*
- *Performing gamma correction*
- *Archiving with the archive option*
- *Performing display quality checks*

## Changing the password

You should change your password from time to time for data security reasons.

You can also change the password the system administrator gave you along with your user name from the outset and use a password of your choice in its place.

1. Open the Visage 7 Web Client login screen.
2. Open the popup menu of the login screen with the right mouse button.



**Note**

Note that this popup menu might look slightly different in your Visage 7 Web Client installation, as your system administrator can configure which menu items are shown here.

For example, **Debug Mode** may only be available to technicians performing systems analysis.

3. Select **Change Password**.
4. Enter your **user name** and your old **password** in the usual way, and press **RETURN**.

You are now prompted to enter a new password on the login screen.

The image shows the Visage PACS / CS login screen. At the top is a logo consisting of a stylized blue 'V' inside a circle. Below the logo, the text 'Visage™ PACS / CS' is displayed. Underneath, it says 'Version: Visage PACS 6.0'. A note follows: 'Please read this note before using system. Download user documentation and the Visage CS Client version 3.0.8.0'. Below the note are three input fields: 'Old password:' with a masked password '\*\*\*\*\*', 'New password:', and 'Confirm:'. To the right of the 'Confirm:' field is a small instruction: 'Please enter your new password and confirm, then press return.' At the bottom is a 'LOGIN' button.

5. Enter the new password in the **New password** box.
6. Enter the new password a second time in the **Confirm** box and press **RETURN**.

Use the new password from now on when logging in.

**Tip**

Be sure to spell the password identically both times. If you forget your password, ask your system administrator for a new one.

## Updating the client software

Every time you log onto the Visage 7 server, the server automatically checks whether a more recent version of the client software is now available.

When a software update is due, either a message will inform you, or updating will start automatically.

If software updating does not start automatically, or if problems occur, you can start reinstallation of the client yourself.

### Note

Before you remove and reinstall the software make sure you have administrator rights on your client PC.

1. Close all Internet Explorer windows first.  
Always start reinstallation directly after you call up the login screen.
2. Open the Visage 7 Web Client login screen.
3. Open the popup menu of the login screen with the right mouse button.
4. Select the **Reinstall Client** option.

-Or-

Select the **Remove Client** option.

Close the Internet Explorer when the system tells you all client components have been removed.

Relaunch the Internet Explorer again and pick Visage 7 Web Client from **Favorites** again. The Visage 7 Web Client software will now be updated automatically.

## Performing data maintenance

If you have the appropriate access rights, you can perform data maintenance tasks in the patient window:

- Make patient data available for other users or user groups
- Delete patient data, or
- Protect patient data from being deleted

**Note**

If your Visage 7 Web Client user rights do not permit you to carry out any of these data maintenance tasks, the corresponding icons are not shown in the patient window toolbar.

**Note**

On rare occasions data maintenance tasks may not be possible for a brief period because a patient's data are currently being updated from the HIS/RIS. In this case a message is displayed informing you that the patient is temporarily locked. Try again later.

## Deleting patient and examination data

It is possible to delete patient data that has not been delete-protected from the patient list and therefore from the Visage 7 server.

Before deleting, make sure you and other users no longer need the patient data.

Once you have deleted a patient from the Visage 7 server you cannot restore the data again, unless you have access to the long-term archive of the modality.

**Tip**

Deleting patient data may become necessary, for example, if patient data are corrected at a modality after the patient's data have already been sent to the web server. Delete the patient on the web server as soon as you learn of this and before the corrected patient is sent to the web server again.

### Deleting patient data



1. Switch to the patient window.
2. Select the patient(s) you want to delete.



3. Click this icon.

The selected patient(s) are now irrevocably deleted from the Visage 7 server.

If you are working with the archive option, only the patients' study data are deleted from the database, the patient entries remain in the patient list.

**Note**

If you select patients both with and without delete-protection, a message will inform you that not all patients will be deleted.

**Deleting examination data**

You can delete study data only if the patient is not delete-protected.



1. Switch to the study/series window.
2. Select the study you want to delete.



3. Click this icon.

A dialog box pops up requesting confirmation for deleting the entire study, a report associated with this study, or one or several selected series or presentation states.

If you delete a presentation state, only the presentation state object is deleted but not the referenced images in the original series.

**Changing access rights to patient data**

If you possess appropriate user rights, you can share the study data you have access to with other colleagues.

You can:

- Grant access rights to individual users, or
- Grant access rights to whole user groups.

**Note**

Do not revoke access rights to patient data for your own user account or for a user group that you are a member of. Otherwise you will no longer have access to the selected patient(s) either. You cannot restore your own access rights to patient data once you have closed the dialog box.

As soon as the patient list is updated, the patient will no longer be displayed. You or your user group can only be granted access rights to this patient data again by another user who has the appropriate rights, or by the system administrator.

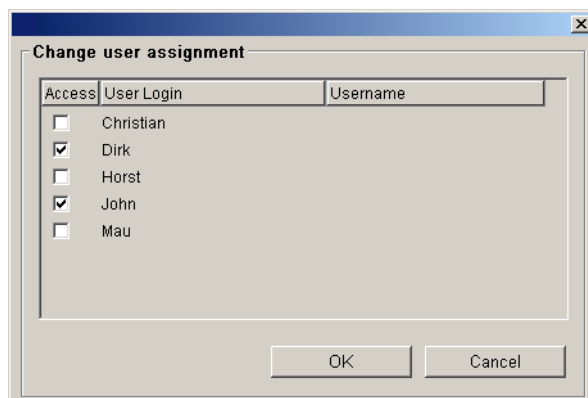
### ***Changing user assignment***



1. Switch to the patient window.
2. Select one or more patients.



3. Click the **Change User Assignment** icon.  
The **Change User Assignment** dialog box opens.



4. Click the users who will have access to the selected patients in the future.  
-Or-  
Remove the checkmark in front of users to whom you want to deny access to the selected patients in the future.
5. Then close the dialog box with **OK**.

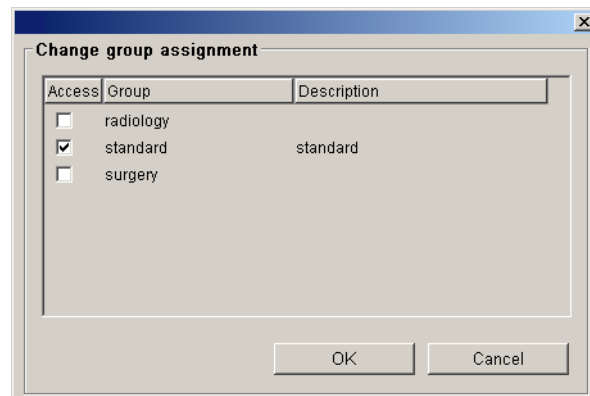
### ***Changing group assignment***



1. Switch to the patient window.
2. Select one or more patients.



3. Click the **Change Group Assignment** icon.  
The **Change Group Assignment** dialog box opens.



4. Click the user groups who will have access to the selected patients in the future.  
-Or-  
Remove the checkmark in front of a group to whom you want to deny access to the selected patients in the future.
5. Then close the dialog box with **OK**.

## Protecting patient data from deletion

Old patient data may be automatically deleted from the Visage 7 server after a certain time if its capacity is exhausted.

You can protect patent data from deletion. These data can be deleted neither automatically nor manually.

You can remove delete-protection again when you are sure you no longer need these patient data.

The right to set or remove a deletion protection flag allows you to remove the deletion protection that has been set both by yourself or by another user.

### Set delete protection



1. Switch to the patient window.
2. Select the patient(s) you want to protect.



3. Click this icon.

The selected patient(s) are now marked with a **Yes** in the **Delete Protect** column.

### Remove delete protection



1. Switch to the patient window.
2. Select the patient(s) you want to release for deletion.



3. Click this icon.

The selected patients are marked with a **No** in the **Delete Protect** column.

#### Note

If all patients are delete-protected, the next automatic deletion will delete the oldest patient data anyway.

## Performing gamma correction

Gamma correction is used to compensate for distortions in image brightness caused by the monitor.

Gamma correction is intended for grayscale images. If you have assigned a color palette to your images before calling gamma correction, the test image will be displayed in grayscales in the **Gamma Adjustment** dialog box. Gamma correction can nevertheless be applied to color images.



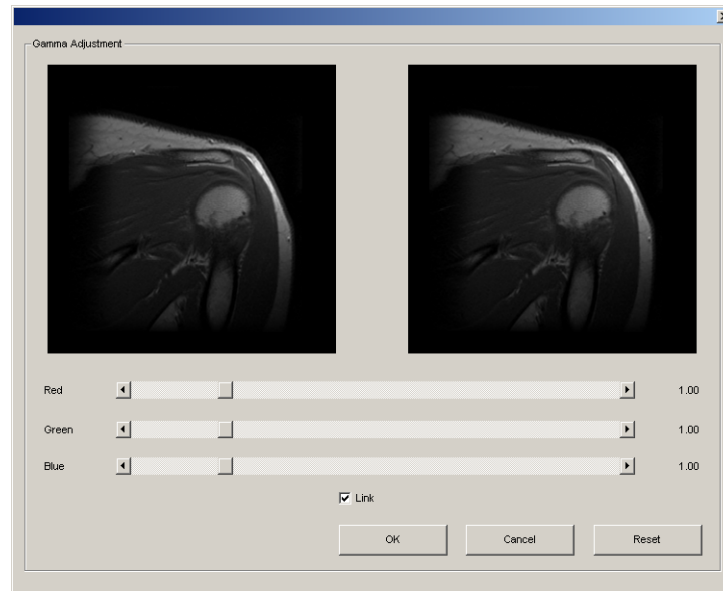
1. Open one of the viewer windows (e.g. viewer 1).
2. Display an image.



3. Click this icon on the toolbar.

The **Gamma Adjustment** dialog box opens. You can correct each color component separately or correct all colors together.





4. Check the **Link** box to move the color component sliders together.
5. Correct the colors using the slider.  
If you move the slider the changes are immediately shown in the right image.
6. Confirm your changes with **OK**.

The **Gamma Adjustment** dialog box closes.

Gamma correction will be applied to all images you load from now on.

#### Tip

The settings for gamma correction are stored for each user on log-off and used in the next session.

In order to reset your gamma correction settings, open the **Gamma Adjustment** dialog box again and click **Reset**. All gamma values will be reset to “1”, which is the factory default.

## Archiving with the archive option

If you have an archive option installed you can choose between various archive methods. Which method you use will depend on your requirements, your archive hardware, and the configuration of the archive.

The following options are available:

- Archiving on RAID hard disks
- Archiving on SAN and NAS devices

The data are sent to the archive according to a configured schedule.

### Tip

Archiving is always performed in the background. As a user you do *not* actively intervene in archiving. However, you can monitor the status of archiving in the study list and exclude studies from archiving.

- *Setting archive protection*
- *Tracing archiving*

## Setting archive protection

You can make settings to prevent certain studies from being archived.



1. Switch to the **study/series window**.
2. Select the study/studies.



3. Click the **Archive Protection** icon on the toolbar of the study/series window.



4. Click this icon to update the study/series list.

Studies with archive protection are marked with a **Yes** in the **Archive Protection** column of the study list.

## Tracing archiving

You can check the archiving status of studies in the study list of the study/series window.

When a study is archived its data is transferred from the local database to the archive. The archiving status of a study describes its availability in the local database and archive.

### Online Status

The **Online Status** column tells you about the availability of the study in the local database.

### Archive Status

The **Archive Status** column tells you about the availability of the study in the archive.

<b>Online Status</b>	<input checked="" type="checkbox"/> Completely available	<input type="checkbox"/> Partially available	<input type="checkbox"/> Not available
<b>Archive Status</b>	<input type="checkbox"/> Not yet archived	<input type="checkbox"/> Partially archived	<input checked="" type="checkbox"/> Completely archived

## Performing display quality checks

Visage 7 Web Client supplies test images that allow you to check the display quality of your monitor(s) from time to time.



1. Open one of the viewer windows (e.g. viewer 1).
2. Select SMPTE 1 or SMPTE 2 from the popup menu.

An SMPTE test pattern will be displayed.



# Appendix

## List of supported modality types and abbreviations









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Abbreviation	Modality
CR	Computed Radiography
CT	Computed Tomography
DR	Digital Radiography
DX	Digital Radiography
ES	Endoscopy
GM	General Microscopy
IO	Intra-oral Radiography
MG	Mammography
MR	Magnetic Resonance
NM	Nuclear Medicine
OT	Other
PR	Presentation State
PT	Positron emission tomography (PET)
PX	Panoramic X-Ray
RF	Radio Fluoroscopy
RT	Radiotherapy Image
SM	Slide Microscopy
SR	SR Document
US	Ultrasound
XA	X-Ray Angiography
XC	External-camera Photography

---



# Overview of functionality supported by client types












## Navigation bar

	Client type View	Client type Classic	Client type Expert	Client type Expert Reading
Patient window 	x	x	x	
Worklist 				x
Study/series window 	x	x	x	
Preview window 	x	x	x	
Report window 	x	x	x	
Report with image 	x	x	x	
Viewer 1 	x	x	x	
Viewer 2 	x	x	x	










	Client type View	Client type Classic	Client type Expert	Client type Expert Reading
Compare mode (vertical) 	x	x	x	
Compare mode (horizontal) 	x	x	x	
Basic MIP/MPR Viewer 			x	
Display protocol viewer 				x
Status information 	x	x	x	x

## Patient window or worklist










	Client type View	Client type Classic	Client type Expert	Client type Expert Reading
Hide/show filter criteria 		x	x	x
Filter parameters (all)	x	x	x	x
Search parameters (all)	x	x	x	x
User-defined filter 		x	x	x











	Client type View	Client type Classic	Client type Expert	Client type Expert Reading
Reset to Default Filter 		x	x	x
Set Filter Properties 		x	x	x
Reset Filter Settings 		x	x	x
Reset Input Fields 		x	x	x
Data source local DB only 		x	x	x
Start Data Query 	x	x	x	x
Cancel Data Query 	x	x	x	x
Retrieve Study from DICOM Node 		x	x	x
Query Patient 		x	x	x
DICOM Send 		x	x	x
DICOM Quick Send 		x	x	x
















	Client type View	Client type Classic	Client type Expert	Client type Expert Reading
Forward 	x	x	x	x
Backward 	x	x	x	x
Set Delete Protection 		x	x	
Remove Delete Protection 		x	x	
Delete Patients 		x	x	
Change Group Assignment 		x	x	x
Change User Assignment 		x	x	x
Export Patient 			x	
Launching Application 		x	x	x

## Study/series window or worklist






	Client type View	Client type Classic	Client type Expert	Client type Expert Reading
Presentation state tab card	x	x	x	
Previous Patient 	x	x	x	
Next Patient 	x	x	x	
Show all Studies 	x	x	x	
Load into viewer 1 	x	x	x	
Load into viewer 2 	x	x	x	
Load to Compare Mode 		x	x	
Load to Compare Mode 		x	x	
Load to Basic MIP/ MPR Viewer 			x	
Load all series as one 	x	x	x	











	Client type View	Client type Classic	Client type Expert	Client type Expert Reading
Refresh 	x	x	x	
Delete object 		x	x	
Change Procedure Step 			x	x
Archive Protection (only with archive option) 		x	x	
Compression Level A 	x	x	x	x
Compression Level B 	x	x	x	x
Encrypted Data Transfer 	x	x	x	x
Non-encrypted Data Transfer 	x	x	x	x
Query Report 		x	x	
Use Local Cache 	x	x	x	












	Client type View	Client type Classic	Client type Expert	Client type Expert Reading
Preload Study 	x	x	x	
Image Preview on / off 	x	x	x	
Truncate Thumbnails for Large Series 	x	x	x	
Select all previews 	x	x	x	
Deselect all previews 	x	x	x	
DICOM Information 	x	x	x	
Launching Application 		x	x	x
DICOM Send 		x	x	x
DICOM Quick Send 		x	x	x
Display as 3D volume 	x	x	x	x











	Client type View	Client type Classic	Client type Expert	Client type Expert Reading
Synchronize with 3D volume 	x	x	x	x
Show/Hide Thin Slice Series 	x	x	x	x
Marked images filter 		x	x	

## Viewers











	Client type View	Client type Classic	Client type Expert	Client type Expert Reading
Change Toolbar Location 	x	x	x	
Auto-Hide Toolbar/Lock Toolbar 	x	x	x	x
Previous Patient 	x	x	x	
Next Patient 	x	x	x	
Previous Study 	x	x	x	











	Client type View	Client type Classic	Client type Expert	Client type Expert Reading
Next Study 	x	x	x	
Previous Series 	x	x	x	
Next Series 	x	x	x	
Previous Scene 	x	x	x	x
Next Scene 	x	x	x	x
Previous Presentation State 	x	x	x	
Next Presentation State 	x	x	x	
Previous Annotated Image 	x	x	x	x
Next Annotated Image 	x	x	x	x
Cancel loading 	x	x	x	x









	Client type View	Client type Classic	Client type Expert	Client type Expert Reading
Select Images 			x	
Windows Print 		x	x	x
DICOM Print 			x	x
Copy to Clipboard 	x	x	x	x
DICOM Send 		x	x	x
DICOM Quick Send 		x	x	x
Export Images 			x	x
DICOM Information 	x	x	x	x
Hide/Show Image Text 	x	x	x	x
Zoom 	x	x	x	x
Quick Zoom 		x	x	x

	Client type View	Client type Classic	Client type Expert	Client type Expert Reading
Magnifying Glass 		x	x	x
Pan 	x	x	x	x
Windowing 	x	x	x	x
Edge Enhancement 	x	x	x	x
Predefined Level Pre-sets 	x	x	x	x
Reset Window Level 	x	x	x	x
Invert 	x	x	x	x
Rotate 	x	x	x	x
Mirror 	x	x	x	x
Fit into Segment 	x	x	x	x



	Client type View	Client type Classic	Client type Expert	Client type Expert Reading
Original size 	x	x	x	x
Measurement Functions 		x	x	x
Show Scoutlines (compare mode only) 		x	x	x
Display Mode 	x	x	x	x
Previous Viewer Layout 				x
Next Viewer Layout 				x
Cine Mode Backward 	x	x	x	x
Cine Mode Stop 	x	x	x	x
Cine Mode Speed 	x	x	x	x
Bouncing Cine 	x	x	x	x

	Client type View	Client type Classic	Client type Expert	Client type Expert Reading
Interactive Cine Mode 	x	x	x	x
Gamma Adjustment 			x	x
Show/Hide Presentation State 	x	x	x	
Edit report 			x	x
Color Map 		x	x	x
Display as 3D volume 	x	x	x	x
Automatic Synchronization with 3D volume 	x	x	x	x
Plane A 	x	x	x	
Plane B 	x	x	x	
Loop All 	x	x	x	

	Client type View	Client type Classic	Client type Expert	Client type Expert Reading
Previous Frame 	x	x	x	
Next Frame 	x	x	x	
Display Reports 	x	x	x	
Display Scenes 	x	x	x	
Hide/Show ECG		x	x	
Mark as read 			x	x
Synchronized scrolling				x
Create Annotation 				x
Select Annotation/Measurement 				x
Save Annotation 				x



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